

CHWR	CHILLED WATER RETURN	
CHWS	— CHILLED WATER SUPPLY	
CA	COMPRESSED AIR	
CR	CONDENSER WATER RETURN	
cs	CONDENSER WATER SUPPLY	
D	— DRAIN	
HPR	HEAT PUMP RETURN	
HPS	HEAT PUMP SUPPLY	
HWR	— HOT WATER RETURN	
HWS	HOT WATER SUPPLY	
G	— NATURAL GAS	
RH	REFRIGERANT HIGH PRESSURE VAPOR	
R	REFRIGERANT LIQUID AND VAPOR LINE	
RS	REFRIGERANT SUCTION / VAPOR	
SMR	— SNOWMELT RETURN	
SMS	— SNOWMELT SUPPLY	
v	— VENT PIPING	

RESPONSIBLE DIVISION:

UNLESS OTHERWISE INDICATED ALL HEATING. VENTILATING, AIR CONDITIONING, PLUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND NON-FUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

SUBSCRIPT FOOTNOTES: 1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC

AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.

2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

ABBRE\/IATIONS

ABBR	EVIATIONS:				
14"	MOUNTING HEIGHT ABOVE	(D)	DEMOLISHED ITEM	HD	HEAD (SEE SCHEDULES)
	FINISHED FLOOR TO CENTER	ÒÉ	DRINKING FOUNTAIN	HP	HEAT PUMP
	OF DEVICE	DIA	DIAMETER	HP	HORSEPOWER
A	AMPS	DIAG	DIAGRAM	HR	HOUR
A.D.	ACCESS DOOR	DIFF	DIFFERENTIAL	HT	HEIGHT
AAV	AIR ADMITTANCE VALVE	DISCH	DISCHARGE	HTR	HEATER
ABV	ABOVE	DIV	DIVISION	HWR	HEATING WATER RETURN
AC	AIR CONDITIONING UNIT	DN	DOWN	HWS	HEATING WATER SUPPLY
AC	ABOVE COUNTER	DS	DUCT SILENCER	HX	HEAT EXCHANGER
AD A E C	AREA DRAIN (SEE SYMBOLS) ABOVE FINISHED CEILING	DWG DX	DRAWING DIRECT EXPANSION	HZ ID	HERTZ
4.F.C. 4.F.G.	ABOVE FINISHED GRADE	(E)	EXISTING ITEM	IG	INSIDE DIAMETER ISOLATED GROUND
AIC	AMPERE INTERRUPTING	EA	EXHAUST AIR GRILLE/REGISTER	IN	INCHES
110	CAPACITY	EAT	ENTERING AIR TEMPERATURE	INV	INVERT
٩F	ARC FAULT CIRCUIT	EC	ELECTRICAL CONTRACTOR	JBOX	JUNCTION BOX
-	INTERRUPTERS	ECC	ECCENTRIC	K	KELVIN
A.F.F.	ABOVE FINISHED FLOOR	EF	EXHAUST FAN	KW	KILOWATT
UHA	AIR HANDLING UNIT	EFF	EFFICIENCY	KVA	KILO VOLT - AMPS
ALUM	ALUMINUM	EL	ELEVATION	L	LENGTH
ΑP	ACCESS PANEL OR DOOR	ELEC	ELECTRIC	LAT	LEAVING AIR TEMPERATURE
ATS	AUTOMATIC TRANSFER SWITCH	ELEV	ELEVATOR	LV	LAVATORY
ΑV	AUDIO / VIDEO	EM	EMERGENCY FUNCTION	LB	POUND
AVG	AVERAGE	ENT	ENTERING	LD	LINEAR DIFFUSER
AWG	AMERICAN WIRE GAGE	EMT	ELECTRIC METALLIC TUBE	LF	LINEAR FEET
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL	LIN	LINEAR
3B	BASEBOARD	EQUIP	EQUIPMENT	LIQ	LIQUID
3D 3FP	BACK DRAFT DAMPER BACK FLOW PREVENTOR	EQUIV ES	EQUIVALENT END SWITCH	LM LRA	LUMEN LOCKED ROTOR AMPS
Bre BL	BOILER	ESP	EXTERNAL STATIC PRESSURE	LV	LOUVER
BLDG	BUILDING	ET	EXPANSION TANK	LV	LEAVING
BLW	BELOW	EWC	ELECTRIC WATER COOLER	LWT	LEAVING WATER
BOB	BOTTOM OF BEAM	EWT	ENTERING WATER	_,,,	TEMPERATURE
BOD	BOTTOM OF DUCT		TEMPERATURE	MBH	THOUSANDS OF BTU PER HOUR
3OP	BOTTOM OF PIPE	EX	EXHAUST	MC	MECHANICAL CONTRACTOR
BSMT	BASEMENT	EXPAN	EXPANSION	MCA	MINIMUM CIRCUIT AMPACITY
3TU	BRITISH THERMAL UNIT	EXT	EXTERNAL	MCB	MAIN CIRCUIT BREAKER
2	CHILLER	F	DEGREES FAHRENHEIT	MD	MOTORIZED DAMPER
CAFCI	COMBINATION ARC FAULT	FA	FREE AREA	MDP	MAIN DISTRIBUTION PANEL
	CIRCUIT INTERRUPTERS	FC	FAN COIL UNIT	MED	MEDIUM
CAP	CAPACITY	FC	FOOTCANDLE	MFR	MANUFACTURER
CB CBV	CIRCUIT BREAKER	FCV	FLOW CONTROL VALVE	MIN	MINIMUM
CBV	CIRCUIT BALANCING VALVE	FD	FIRE DAMPER	MISC	MISCELLANEOUS
CCT	CORRELATED COLOR	FD FIN	FLOOR DRAIN	MLO MOCP	MAIN LUG ONLY
CKT	TEMPERATURE CIRCUIT	FIN	FINISHED FULL LOAD AMPS	MOCP	MAXIMUM OVERCURRENT PROTECTION
CFH	CUBIC FEET PER HOUR	FLEX	FLEXIBLE	MTD	MOUNTED
CFM	CUBIC FEET PER MINUTE	FLR	FLOOR	MUA	MAKE-UP AIR UNIT
CHWR	CHILLED WATER RETURN	FOB	FLAT ON BOTTOM	N	NEUTRAL
CHWS	CHILLED WATER SUPPLY	FOT	FLAT ON TOP	NC	NORMALLY CLOSED
CI	CAST IRON	FP	FIRE PROTECTION	NEG	NEGATIVE
CL	CENTER LINE	FP	FIRE PUMP	NIC	NOT IN CONTRACT
CLG	CEILING	FPM	FEET PER MINUTE	NL	NIGHT / SECURITY LIGHT - DO
CMU	CONCRETE MASONRY UNIT	FPS	FEET PER SECOND		NOT SWITCH
CO	CLEAN OUT	FS	FLOW SWITCH	NO	NORMALLY OPEN
COL	COLUMN	FSD	FIRE/SMOKE DAMPER	NOM	NOMINAL
COMP	COMPRESSOR	FT	FEET	NTS	NOT TO SCALE
CONC	CONCRETE	FXC	FLEXIBLE CONNECTION	OA	OUTSIDE AIR
COND	CONDENSATE	GND	GROUND	OBD	OPPOSED BLADE DAMPER
CONN	CONNECTION CONTINUATION	GA GAL	GAUGE GALLON	OCC	ON CENTER OCCUPIED
	CONTRACTOR	GALV	GALVANIZED	OCP	OVER CURRENT PROTECTION
CRI	COLOR RENDERING INDEX	GEC	GROUND ELECTRODE	OD	OUTSIDE DIAMETER
CT	COOLING TOWER	GLO	CONDUCTOR	OL	OVERLOAD
CT	CURRENT TRANSFORMER	GF	GROUND FAULT CIRCUIT	ORD	OVERFLOW ROOF DRAIN
CU	CONDENSING UNIT	•	INTERRUPTER	OZ	OUNCE
CU	COPPER	GC	GENERAL CONTRACTOR	PBD	PARALLEL BLADE DAMPER
CUH	CABINET UNIT HEATER	GPH	GALLONS PER HOUR	PD	PRESSURE DROP
CVB	CONSTANT VOLUME BOX	GPM	GALLONS PER MINUTE	PH	PHASE
CWR	CONDENSER WATER RETURN	GRS/LB	GRAINS PER POUND	POS	POSITIVE PRESSURE
CWS	CONDENSER WATER SUPPLY	H 2O	WATER	POS	POINT OF SALES
DВ	DRY BULB	HB	HOSE BIBB	PRV	PRESSURE REDUCING VALVE
DEPT	DEPARTMENT			PS	PRESSURE SWITCH

Big	horn Consulting Engineers, Inc. Mechanical & Electrical Engineers
E	386 Indian Road Grand Junction, CO 81501 Phone: (970) 241-8709

SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

QTY

PRESSURE TRANSMITTER

PTAC PACKAGED TERMINAL AIR

POLYVINYL CHLORIDE

RELOCATED ITEM

RETURN AIR GRILLE /

RCP REFLECTED CEILING PLAN

CONDITIONER

PLUG VALVE

REGISTER

ROOF DRAIN RELIEF REQD REQUIRED

RETURN FAN RELATIVE HUMIDITY REHEAT COIL

RATED LOAD AMPS

SHORT CIRCUIT SCA SHORT CIRCUIT AVAILABLE

SCH SCHEDULE

SPD

TR

VAV

VRF

VTR

SCCR SHORT CIRCUIT CURRENT

SMOKE DAMPER SMOKE EXHAUST FAN

SUPPLY FAN SENSIBLE HEAT SHOWER STATIC PRESSURE

SPEC SPECIFICATION SQUARE STAINLESS STEEL SAFETY SHOWER STANDARD

TEMP TEMPERATURE

STL STEEL SYS SYSTEM

TYP TYPICAL

UNOCC UNOCCUPIED URINAL VOLTS **VOLT AMPERE** VALVE

VOLT VOLTAGE

WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF WPIU WEATHERPROOF IN-USE WSR WITHSTAND RATING XFMR TRANSFORMER

REVOLUTIONS PER MINUTE SUPPLY AIR GRILLE / REGISTER

SURGE PROTECTION DEVICE

TRANSFER GRILLE / REGISTER

TEMPERATURE TRANSMITTER TELECOMMUNICATIONS TERMINAL BACKBOARD

VARIABLE AIR VOLUME UNIT

VENT THROUGH ROOF

VARIABLE FREQUENCY DRIVE

VARIABLE REFRIGERANT FLOW

TAMPER RESISTANT

TRANSFORMER UNDERCUT DOOR **UNIT HEATER** UNO UNLESS NOTED OTHERWISE

QUANTITY

RENOVATION PSI POUNDS PER SQUARE INCH

Interior Design

Project Management

970-242-1058 office

BLYTHE GROUP + co.

Grand Junction, CO 81501

622 Rood Avenue

125 N SPRUCE ST GRAND JUNCTION, CO 81501

MESA COUNTY JUSTICE

CENTER SECOND FLOOR

MECHANICAL COVER SHEET

FOR CONSTRUCTION



REV. DESC.

DATE: 08/30/2024

PROJECT #: 23040

LINE DESIGNATION SYMBOLS							
CHWR	CHILLED WATER RETURN						
CHWS	CHILLED WATER SUPPLY						
CA	COMPRESSED AIR						
CR	CONDENSER WATER RETURN						
cs	CONDENSER WATER SUPPLY						
D	DRAIN						
HPR	HEAT PUMP RETURN						
HPS	HEAT PUMP SUPPLY						
HWR	HOT WATER RETURN						
HWS	HOT WATER SUPPLY						
G	NATURAL GAS						
RH	REFRIGERANT HIGH PRESSURE VAPOR						
R	REFRIGERANT LIQUID AND VAPOR LINE						
RS	REFRIGERANT SUCTION / VAPOR						
SMR	SNOWMELT RETURN						
SMS	SNOWMELT SUPPLY						
v	VENT PIPING						

MECHANICAL SHEET LIST						
Sheet Number	Sheet Name					
MEC1-0	MECHANICAL / ELECTRICAL CODE COMPLIANCE					
M0-1	MECHANICAL COVER SHEET					
MD1-1	MECHANICAL - DEMOLITION FLOOR PLAN					
M1-1	MECHANICAL - FLOOR PLAN					
M1-2	MECHANICAL PIPING - FLOOR PLAN					
M2-1	MECHANICAL - SCHEDULES					
M2-2	MECHANICAL - HVAC ZONING PLAN					



Project Information

Project Type:

2018 IECC Energy Code: 23235 MCJC 2ND FLOOR RENOVATION Project Title: Location: Grand Junction, Colorado Climate Zone:

Alteration

Owner/Agent:

Construction Site: 125 N SPRUCE STREET GRAND JUNCTION, Colorado 81501

MESA COUNTY 125 N SPRUCE STREET GRAND JUNCTION, Colorado 81501 970-257-3640 970-241-8709 mesa.court@judicial.state.co.us

Designer/Contractor: BIGHORN CONSULTING ENGINEERS 386 INDIAN ROAD GRAND JUNCTION, Colorado 81501 office@bighorneng.com

Mechanical Systems List

Quantity System Type & Description

FPVAV-1 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 36 kBtu/h No minimum efficiency requirement applies Fan System: FPVAV-1 FAN -- Compliance (Motor nameplate HP and fan efficiency method): Passes

FAN 1 Supply, Single-Zone VAV, 3000 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Fan array <= 5 total HP

VAV-2 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 6 kBtu/h

No minimum efficiency requirement applies VAV-3 (Single Zone):

Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 4 kBtu/h No minimum efficiency requirement applies

Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 6 kBtu/h No minimum efficiency requirement applies VAV-5 (Single Zone):

Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 3 kBtu/h No minimum efficiency requirement applies VAV-6 (Single Zone):

Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 4 kBtu/h No minimum efficiency requirement applies

Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 4 kBtu/h No minimum efficiency requirement applies VAV-8 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 6 kBtu/h

No minimum efficiency requirement applies Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 7 kBtu/h No minimum efficiency requirement applies

VAV-10 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 19 kBtu/h

Report date: 08/27/24 Project Title: 23235 MCJC 2ND FLOOR RENOVATION Data filename:

Quantity System Type & Description

No minimum efficiency requirement applies

VAV-11 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 6 kBtu/h No minimum efficiency requirement applies

CU-1 (Single Zone): Cooling: 1 each - VRF Zone Fan Unit, Capacity = 36 kBtu/h, Unknown Economizer

No minimum efficiency requirement applies AC-1 (Single Zone):

Cooling: 1 each - VRF Zone Fan Unit, Capacity = 36 kBtu/h, Unknown Economizer No minimum efficiency requirement applies

Fan System: AC-1 FAN -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

AC-1 FAN Supply, Single-Zone VAV, 920 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency , fan exception: Single fan <= 5HP

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Payton Sanders - Mechanical Engineer Payton Sanders Name - Title

08-27-2024

Project Title: 23235 MCJC 2ND FLOOR RENOVATION Data filename:

Report date: 08/27/24

2018 INTERNATIONAL ENERGY CODE (IECC) CHECKLIST FOR COMMERCIAL CONSTRUCTION

OF OPERATION FOR SPECIFIC EQUIPMENT AND SYSTEM CONTROL.

- C403.1.1 MECHANICAL SYSTEM DESIGN CRITERIA: INTERIOR DESIGN CONDITIONS OF 72o/F (MAX) HEATING, 75o/F (MIN) COOLING. EXTERIOR DESIGN CONDITIONS: 940/F DB/610/F WB COOLING (1% ASHRAE VALUE), 3.40/F HEATING (ASHRAE 99.6% VALUE)
- C403.5 ECONOMIZER: INDIVIDUAL FAN SYSTEMS WITH COOLING CAPACITY GREATER THAN 54,000 BTU/HR IN BUILDINGS HAVING OTHER THAN A GROUP R OCCUPANCY SHALL BE EQUIPPED WITH AIR ECONOMIZERS. SEE EQUIPMENT SCHEDULE FOR PARTICULAR UNIT DESIGNATION.
- C403.4 HEATING AND COOLING SYSTEM CONTROLS: ALL SYSTEMS SHALL BE CONTROLLED AS REQUIRED BY THIS SECTION. SEE SEQUENCES
- C403.8 FANS AND FAN CONTROLS: FAN CONTROL AND ALLOWABLE HORSEPOWER SHALL BE IN ACCORDANCE WITH THIS SECTION. SEE COMCHECK REPORTS FOR SPECIFIC DETAILS OF FAN SYSTEMS AND HORSEPOWER LIMITATIONS.
- C403.11.1 DUCT AND PLENUM INSULATION AND SEALING: SUPPLY AND RETURN DUCTS AND PLENUMS SHALL BE INSULATED WITH NOT LESS THAN R-6 INSULATION WHERE LOCATED IN UNCONDTIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 TO 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES 5 TO 8. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 TO 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES 5-8. SEE INSULATION DIAGRAM FOR SPECIFIC LOCATION REQUIREMENTS. CONSTRUCTION AND SEALING OF DUCTWORK SHALL BE IN ACCORDANCE WITH IMC 603 AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- C403.11.3 PIPING INSULATION: PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.11.3 OF THIS CODE.
- C405.2 AND C405.3 LIGHTING CONTROLS AND INTERIOR LIGHTING POWER REQUIREMENTS: THE LIGHTING SYSTEMS SHALL BE IN COMPLIANCE WITH THESE SECTIONS OF THE CODE. SEE LIGHTING SHEETS FOR LUMINAIRE SCHEDULE AND CONTROL FUNCTIONS.
- C403.1.1 CALCULATION OF HEATING AND COOLING LOADS: DESIGN LOADS SHALL BE DETERMINED IN ACCORDANCE WITH ASHRAE STANDARD 183 OR EQUIVALENT COMPUTATIONAL PROCEDURE USING THE DESIGN PARAMETERS IN CHAPTER 3. SEE OUTPUT CAPACITY REPORTS FOR
- C403.2.2 VENTILATION: VENTILATION, EITHER NATURAL OR MECHANICAL, SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 4 OF THE IMC. SEE VENTILATION CALCULATIONS FOR SPECIFIC PROJECT INFORMATION.
- C101.5.1 COMPLIANCE: COMMERCIAL BUILDINGS SHALL MEET THE PROVISIONS OF IECC COMMERCIAL PROVISIONS. SEE COMCHECK REPORTS FOR SPECIFIC PROJECT COMPLIANCE.

Interior Design **Project Management** 622 Rood Avenue Grand Junction, CO 81501

970-242-1058 office BLYTHE GROUP + co.

MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

125 N SPRUCE ST GRAND JUNCTION, CO 81501

MECHANICAL / ELECTRICAL CODE COMPLIANCE

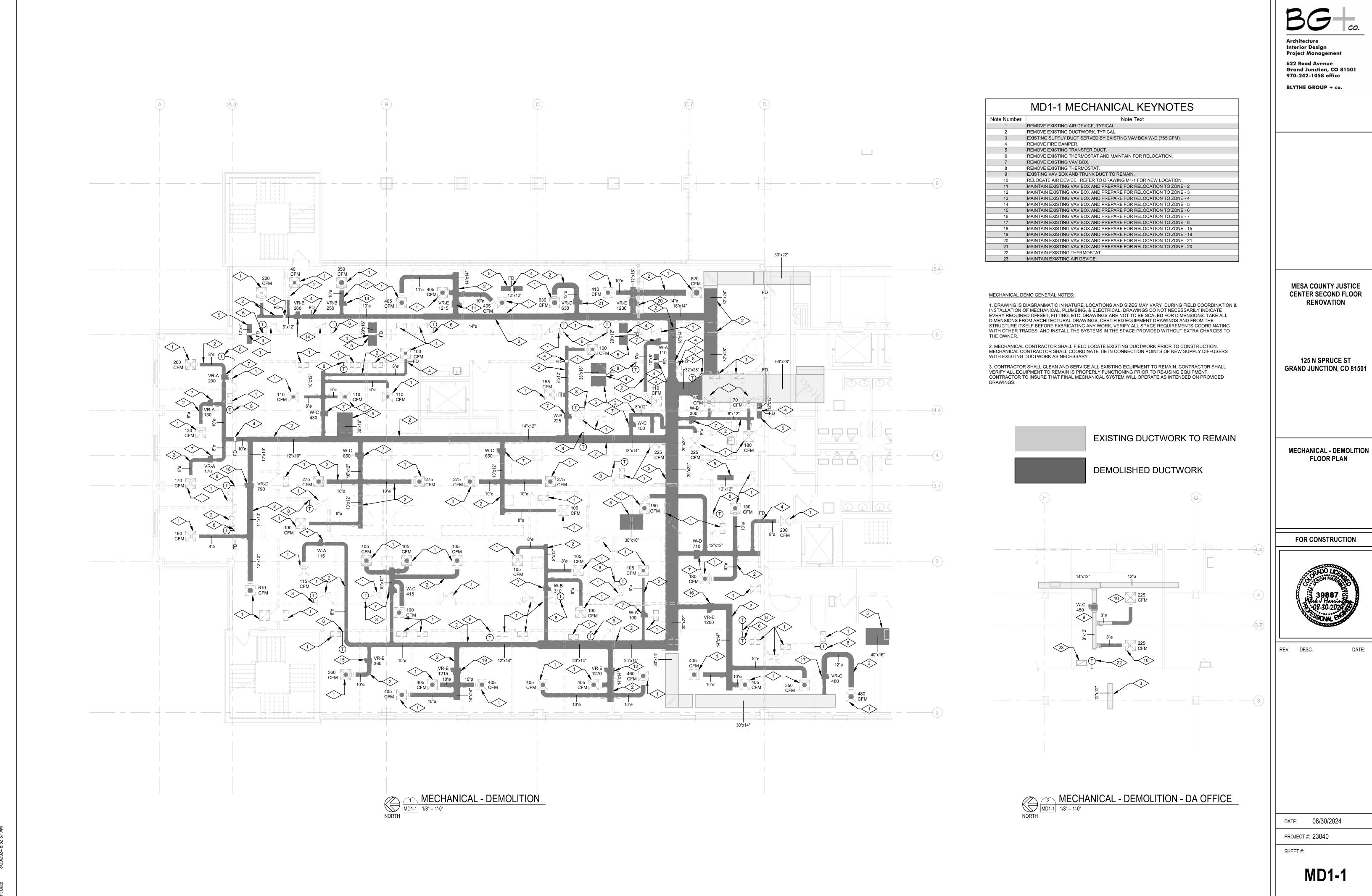
FOR CONSTRUCTION



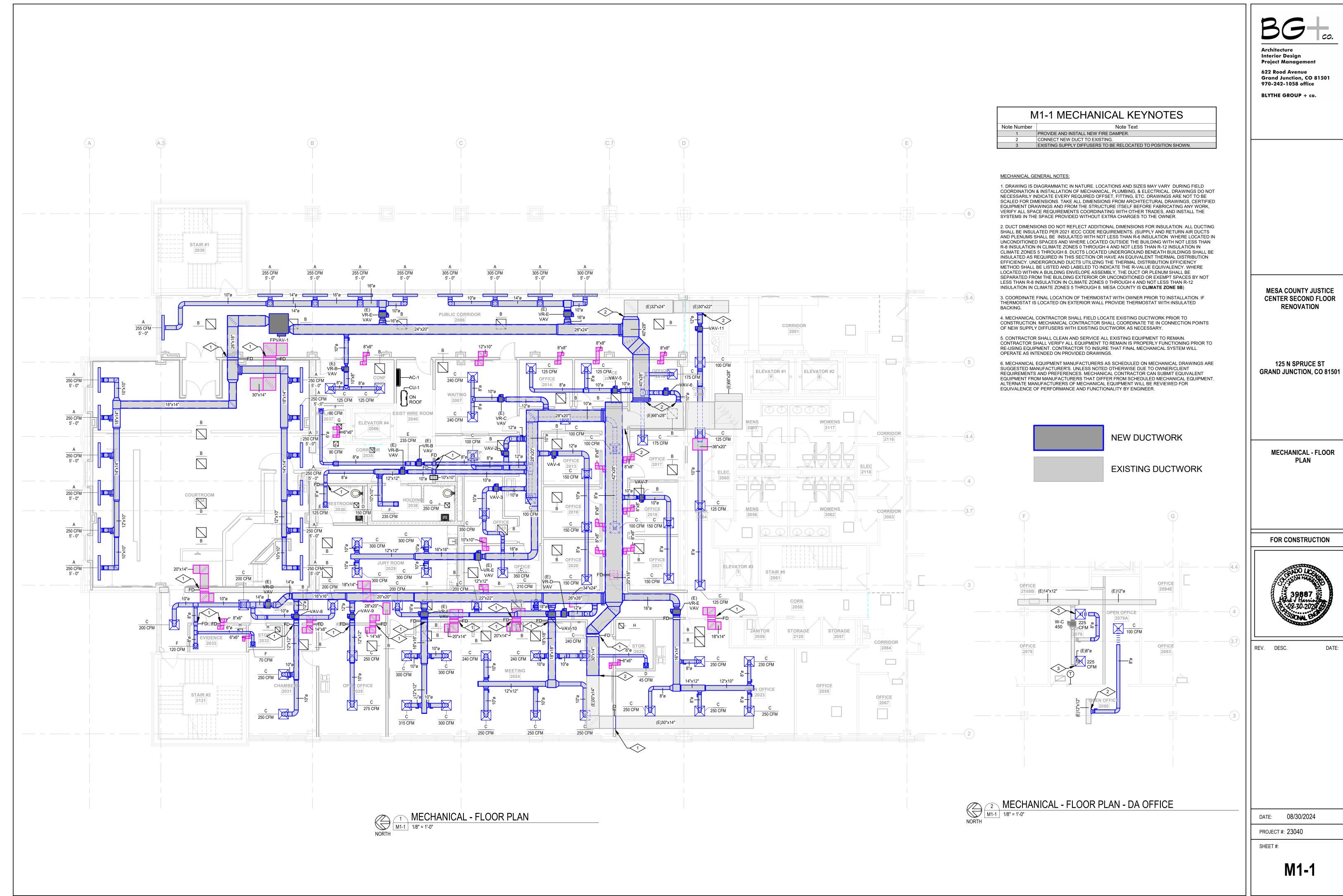
DATE: 08/30/2024

PROJECT #: 23040

MEC1-0

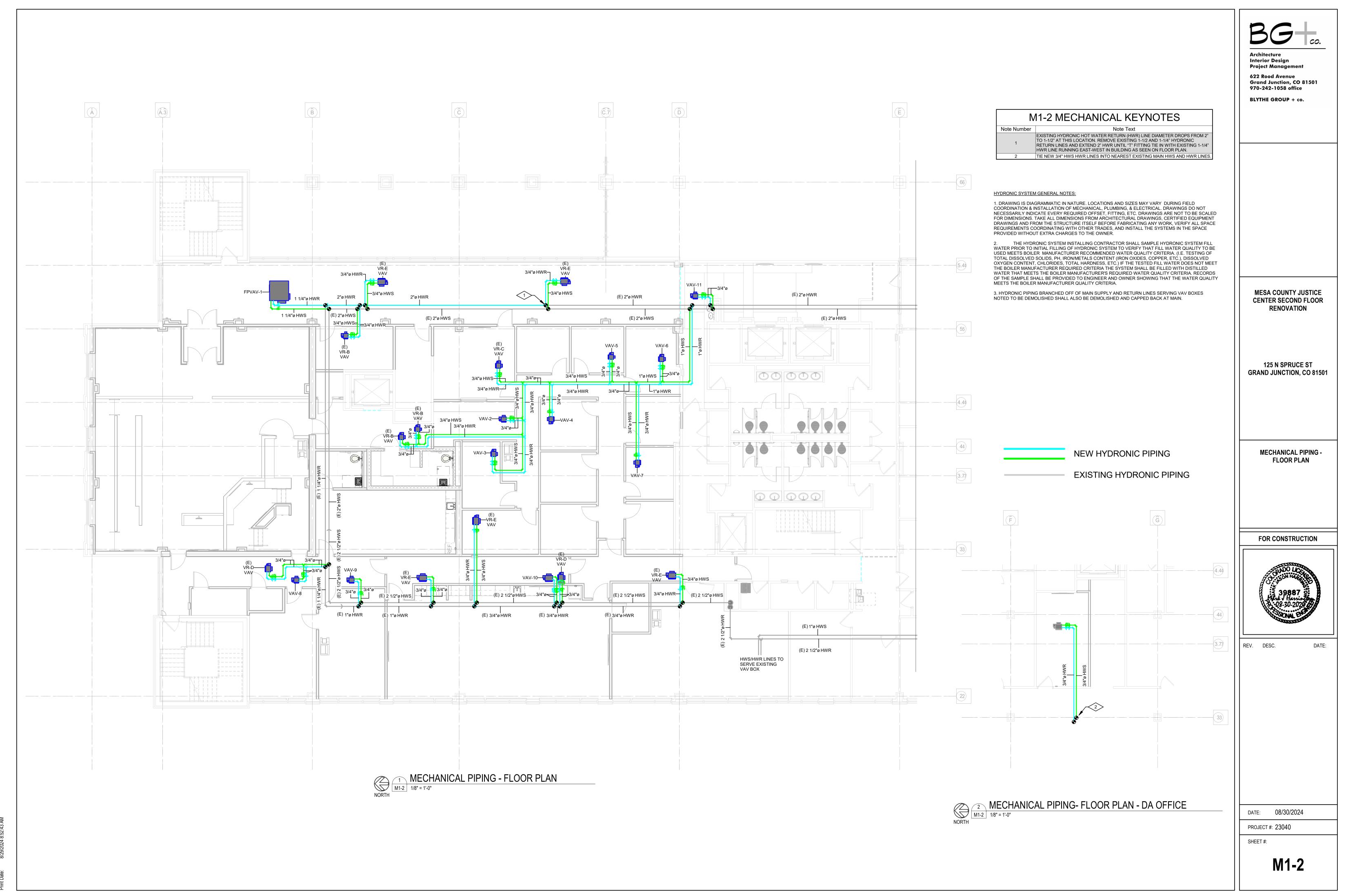




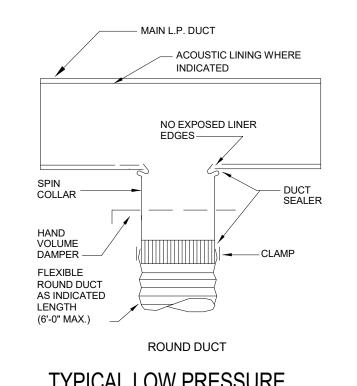


MESA COUNTY JUSTICE CENTER SECOND FLOOR

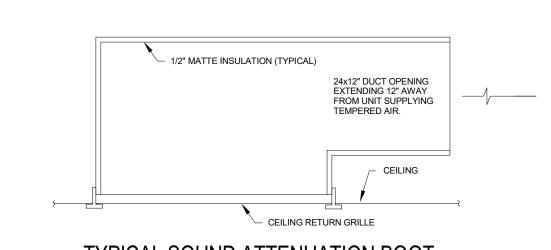




Project Team:

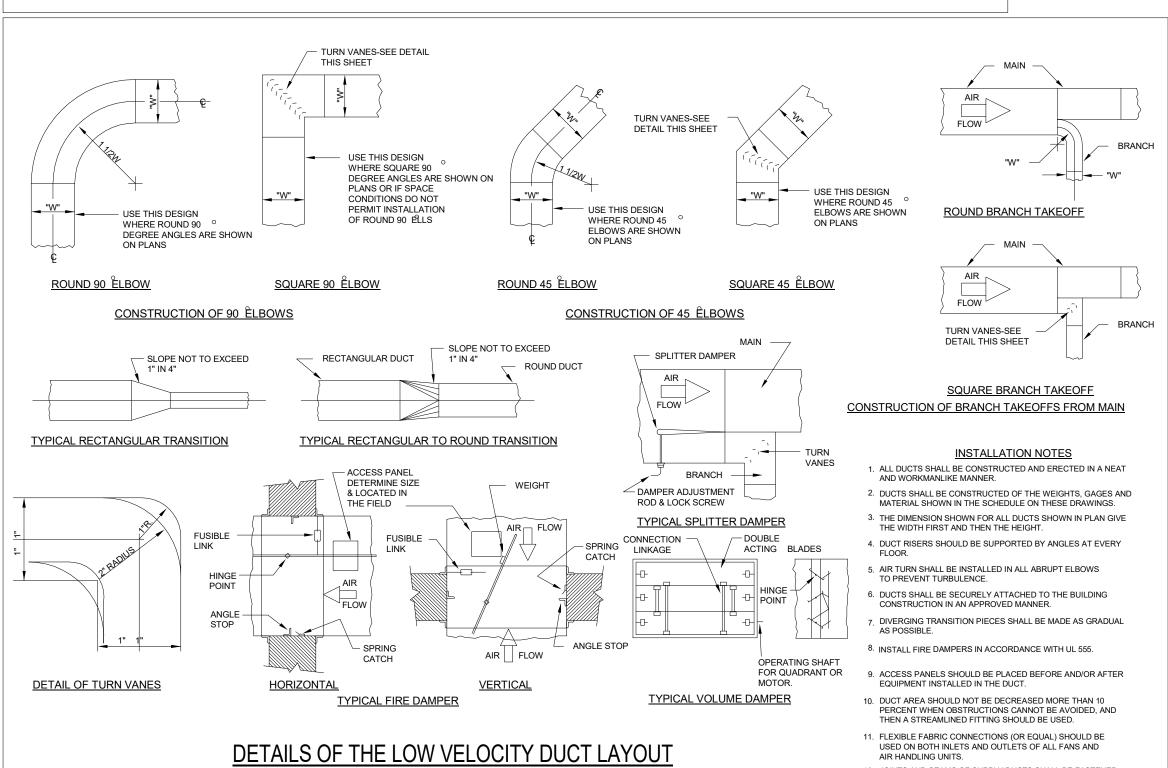


NOT TO SCALE



TYPICAL SOUND ATTENUATION BOO
NOT TO SCALE

						RESSURE DUC E DOES NOT EXCEED 2" WA		
GREATEST DUCT	STEEL DUCTS U.S. STANDARD GAUGE	ALUMINUM DUCTS B & S GAUGE	LONGITUDINAL SEAM	TRANSVERSE JOINT SMALLEST DIMENSION	TRANSVERSE JOINT GREATEST DIMENSION		LL DUCTS 18" THRU 54" SHALL BE	CROSSBROKEN)
12" OR LESS	26	24(0.020°)	PITTSBURGH OR ACME LOCK	DRIVE SLIP OR POCKET LOCK OR BAR SLIP	PLAIN "S" SLIP OR POCKET LOCK OR BAR SLIP		NONE REQUIRED	· · · · · · · · · · · · · · · · · · ·
13" THRU 18"	24	22(0.025°)	PITTSBURGH OR ACME LOCK	DRIVE SLIP OR POCKET LOCK OR BAR SLIP	PLAIN "S" SLIP OR POCKET LOCK OR BAR SLIP		NONE REQUIRED	
19" THRU 30"	24	22(0.025°)	PITTSBURGH OR ACME LOCK	HEMMED "S" SLIP OR BAR SLIP OR DRIVE SLIP OR 1" POCKET LOCK	HEMMED "S" SLIP OR BAR SLIP OR 1" POCKET LOCK		OCATED 4'-0" OR LESS ON CENTER E WITH 1"X1"X1/8" ANGLES AT 4 FT	
31" THRU 42"	22	20(0.032°)	PITTSBURGH OR ACME LOCK	DRIVE SLIP 18" OR LESS BAR SLIP REIN- FORCED BAR SLIP OR POCKET LOCK	BAR SLIP OR REIN- FORCED BAR SLIP OR POCKET LOCK		OCATED 4'-0" OR LESS ON CENTER E WITH 1"X1"X1/8" ANGLES AT 4 FT	
43" THRU 54"	22	20(0.032°)	PTIISBURGH LOCK	1 1/4" BAR SLIP, OR RE- INFORCED BAR SLIP, OR 1 1/2" POCKET LOCK	1 1/4" BAR SLIP, OR RE- INFORCED BAR SLIP, OR 1 1/2" POCKET LOCK		OCATED 4'-0" OR LESS ON CENTER E WITH 1"X1"X1/8" ANGLES AT 4 FT	
55" THRU 60"	20	18(0.040°)	PTIISBURGH LOCK	1 1/4" BAR SLIP, OR RE- INFORCED BAR SLIP, OR 1 1/2" POCKET LOCK	1 1/4" BAR SLIP, OR RE- INFORCED BAR SLIP, OR 1 1/2" POCKET LOCK		OCATED 4'-0" OR LESS ON CENTER E WITH 1"X1"X1/8" ANGLES AT 4 FT	
61" THRU 84"	20	18(0.040°)	PTIISBURGH LOCK	REINFORCED BAR SLIP, OR ANGLE SLIP, ALTER- NATE BAR SLIP, OR AN- GLE REINFORCED POCKET LOCK	REINFORCED BAR SLIP, OR ANGLE SLIP, ALTER- NATE BAR SLIP, OR AN- GLE REINFORCED POCKET LOCK	CENTERS. SIDES UNDER 60" NE)" WITH 1 1/2"X1 1/2"X1/8" ANGLES (EED NO REINFORCING IF JOINTS A ON 8"-0" CENTERS REINFORCE WIT ITERS.	RE ON
85" THRU 96"	18	16(0.051°) (LONGITUDINAL SEAM MAY BE STANDING SEAM)	PTIISBURGH LOCK	1 1/2" COMPANOIN AN- GLES, OR ANGLE RE- INFORCED POCKET LOCK, OR 1 1/2" ANGLE SLIP OR REINFORCED BAR SLIP	1 1/2" COMPANOIN AN- GLES, OR ANGLE RE- INFORCED POCKET LOCK, OR 1 1/2" ANGLE SLIP OR REINFORCED BAR SLIP	CENTERS. SIDES 61" THRU 84" I 2'-0" CENTERS. SIDES 60" OR LE	" WITH 1 1/2"X1 1/2"X3/16" ANGLES REINFORCE WITH 1 1/2"X1 1/2"X1/8 SS NEED NO REINFORCING IF JOI DN 8'-0" CENTERS REINFORCE WIT ITERS.	" ANGLES ON NTS ARE ON
OVER 96"	18	16(0.051°) (LONGITUDINAL SEAM MAY BE STANDING SEAM)	PTIISBURGH LOCK	2" COMPANOIN ANGLE, OR 2"X2"X1/4" ANGLE SLIP, OR 2"X2"X1/4" ANGLE REINFORCED POCKET LOCK OR REINFORCED BAR SLIP	2" COMPANION ANGLE, OR 2"X2"X1/4" ANGLE SLIP, OR 2"X2"X1/4" ANGLE REINFORCED POCKET LOCK OR REINFORCED BAR SLIP	REINFORCE ALL SIDES 85" THRU CENTERS. REINFORCE ALL SID 2'-0" CENTERS. REINFORCE ALL	" WITH 2"X2"X1/4" ANGLES ON 2"-0" J 96" WITH 1 1/2"X1 1/2"X3/16" ANG ES 61" THRU 84" WITH 1 1/2"X1 1/2" SIDES UNDER 60" WITH 1 1/2"X1 1/2" NTER. NO REINFORCING IF JOINT	LES ON 2'-0" X1/8" ANGLES ON /2"X1/8" AN-
PITTSBURG	GH LOCK A	CME LOCK	DRIVE SLIP	POCKET LOCK	BAR SLIP	HEMMED "S" SLIP	REINFORCED BAR	ANGLES TO BE THE SAME SIZE AS REQUIRED REINFORCING ANGLES SLIP ANGLE SLIP
	T <i>A</i> F	ANGLES TO BE THE SAME SIZE AS REQUIRED REINFORCING ANGLES		CAULK OR GASKET — 	ANGLES TO BE THE SAME SIZE AS REQUIRED REINFORCING ANGLES			ANGLES TO BE THE SAME SIZE AS REQUIRED REINFORCING ANGLES
ALTERNATE	BAR SLIP	ANGLE REINFO	ORCED POCKET	LOCK COMPAN	NION ANGLES	PLAIN "S" SLIP	STANDING SEAM	ANGLE REINFORCED STANDING SEAM



				AIR (CONDITI	ONING E	EQUIPM	ENT SCI	HEDULE				
TYPE MARK	SERVICE	NOM. COOLING CAPACITY (BTU/HR)	SUPPLY AIRFLOW (CFM)	EER2 EFF.	REFRIGERA LIQUID	NT PIPING VAPOR	VOLTS	PHASE	FREQUENCY	RICAL MCA (A)	MANUFACTURER	MODEL#	OPTIONS/ ACCESSORIES
AC-1	WIRE ROOM	36,000	920	10.8	3/8"	5/8"	208 V	1	60 Hz	1 A	MITSUBISHI	PKA-A36KA8	NOTE-1

1. INDOOR WALL MOUNTED COOLING ONLY SPLIT SYSTEM UNIT. PROVIDE WITH SIMPLE MA PROGRAMMABLE THERMOSTAT. REFRIGERANT LINESET RECOMMENDED BY MANUFACTURER BASED ON FIELD EQUIVALENT PIPING LENGTHS AND FITTINGS, BLUE DIAMOND ADVANCED MINI CONDENSATE PUMP WITH RESERVOIR AND SENSOR 208V/1PH/60HZ, DISCONNECT SWITCH.

		MAX.	MIN. AIRFLOW	HOT WAT	HOT WATER HEATING COIL		HOT WATER HEATING COIL					
Mark	SERVICE	AIRFLOW SETPOINT (CFM)	SETPOINT (CFM)	CAPACITY (MBH)	FLUID FLOW RATE (GPM)	EAT (°F)	LAT (°F)	LWT (°F)	EWT (°F)	MANUFACTURER	MODEL#	OPTIONS/ ACCESSORIES
FPVAV-1	ZONE - 1	3000	900	89.6	9.0	55	100	160	180	TRANE	VPWF16	NOTE-1
(E) VR-E VAV	ZONE - 2	1215	365	14.9	1.5	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-E VAV	ZONE - 3	1270	385	15.7	1.6	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-B VAV	ZONE - 4	250	75	3.1	0.3	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-B VAV	ZONE - 5	260	80	3.3	0.3	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-B VAV	ZONE - 6	360	110	4.5	0.4	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-E VAV	ZONE - 7	1200	360	14.7	1.5	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-C VAV	ZONE - 8	480	150	6.1	0.6	55	100	160	180	EXISTING	EXISTING	NOTE-1
VAV-2	ZONE - 9	500	150	6.1	0.6	55	100	160	180	TRANE	VCWF08	NOTE-1
VAV-3	ZONE - 10	350	105	4.3	0.4	55	100	160	180	TRANE	VCWF08	NOTE-1
VAV-4	ZONE - 11	450	135	5.5	0.5	55	100	160	180	TRANE	VCWF08	NOTE-1
VAV-5	ZONE - 12	250	75	3.1	0.3	55	100	160	180	TRANE	VCWF06	NOTE-1
VAV-6	ZONE - 13	350	105	4.3	0.4	55	100	160	180	TRANE	VCWF08	NOTE-1
VAV-7	ZONE - 14	300	90	3.7	0.4	55	100	160	180	TRANE	VCWF08	NOTE-1
(E) VR-D VAV	ZONE - 15	790	240	9.8	1.0	55	100	160	180	EXISTING	EXISTING	NOTE-1
VAV-8	ZONE - 16	500	150	6.1	0.6	55	100	160	180	TRANE	VCWF08	NOTE-1
VAV-9	ZONE - 17	550	165	6.7	0.7	55	100	160	180	TRANE	VCWF08	NOTE-1
(E) VR-E VAV	ZONE - 18	1215	365	14.9	1.5	55	100	160	180	EXISTING	EXISTING	NOTE-1
VAV-10	ZONE - 19	1515	460	18.7	1.9	55	100	160	180	TRANE	VCWF12	NOTE-1
(E) VR-D VAV	ZONE - 20	630	190	7.8	0.8	55	100	160	180	EXISTING	EXISTING	NOTE-1
(E) VR-E VAV	ZONE - 21	1230	370	15.1	1.5	55	100	160	180	EXISTING	EXISTING	NOTE-1
VAV-11	ZONE - 22	475	145	5.9	0.6	55	100	160	180	TRANE	VCWF08	NOTE-1

1. PROVIDE WITH UC400 CONTROLLER, WIRELESS WIFI WALL MOUNTED DIGITAL DISPLAY ZONE SENSOR WITH EXTERNALLY ADJUSTABLE SETPOINT AND LOCAL CARBON DIOXIDE SPACE SENSOR, TWO (2) ROW 30% PROPYLENE GLYCOL HEATING COIL, OCCUPIED/UNOCCUPIED OVERRIDE BUTTON, CONTROLS 24V TRANSFORMER MATCHING POWER FEED TO VAV BOX, AIRFLOW SWITCH, 1/2" SOUND ATTENUATION LINER. PROVIDE VAV BOXES WITH CONTROLS TO MEET INTENT OF 2018 INTERNATIONAL ENERGY CONSERVATION CODE REQUIREMENTS.

	AIR COOLED CONDENSING UNIT											
		NOM. COOLING	REFRIGER	ANT PIPING			ELECTRICAL					OPTIONS/
TYPE MARK	SERVICE	CAPACITY (MBH)	LIQUID	VAPOR	VOLTS	PHASE	FREQUENCY	MCA (A)	MOCP (A)	MANUFACTURER	MODEL#	ACCESSORIES
CU-1	WIRE ROOM	36	3/8"	5/8"	208 V	1	60 Hz	25 A	31 A	MITSUBISHI	PUY-A36NKA7	NOTE-1

1. OUTDOOR AIR-COOLED CONDENSER UNIT. PROVIDE WITH 24" TALL SLING STAND, AIR OUTLET GUIDE, CENTRALIZED DRAIN PAN, SERVICE TOOL, HAIL GUARDS, REFRIGERANT LINESET RECOMMENDED BY MANUFACTURER BASED ON FIELD EQUIVALENT PIPING LENGTHS AND FITTINGS, CONDENSING UNIT MOUNTING PAD 24"X42"X3", ADVANCED WIND BAFFLES, UNIT SHALL BE RATED FOR LOW AMBIENT COOLING OPERATION.

	GRILLE-REGISTER-DIFFUSER SCHEDULE										
TYPE MARK	MOUNTING TYPE	DIFFUSER SIZE	FINISH	MANUFACTURER	MODEL#	NOTES					
A	CEILING - LINEAR SLOT DIFFUSER	5'-0"	WHITE	PRICE	SDS	NOTE-1					
В	CEILING - PERFORATED FACE RETURN	2'-0" x 2'-0"	WHITE	PRICE	PDDR	NOTE-2					
С	CEILING - SQUARE PLAQUE DIFFUSER	2'-0" x 2'-0"	WHITE	PRICE	SPD	NOTE-3					
D	CEILING - PERFORATED FACE EXHAUST	1'-0" X 1'-0"	WHITE	PRICE	10	NOTE-3					
E	CEILING - SQUARE PLAQUE DIFFUSER	1'-0" X 1'-0"	WHITE	PRICE	SPD	NOTE-3					
F	CEILING - MAXIMUM SECURITY SUPPLY DIFFUSER	1'-0" X 1'-0"	WHITE	PRICE	MSRRCD	NOTE-4					
G	CEILING - MAXIMUM SECURITY EXHAUST GRILLE	1'-0" X 1'-0"	WHITE	PRICE	MSRRG	NOTE-5					
Н	CEILING - PERFORATED FACE RETURN	1'-0" x 1'-0"	WHITE	PRICE	PDDR	NOTE-2					

1. PROIVDE WITH INSULATED SDB PLENUM, FIBER FREE FOAM INSULATION, 3/4" SLOTS, 3-SLOTS, AND PATTERN CONTROLLER.
2. PORVIDE WITH 18"x18" SQUARE NECK.
3. PROVIDE WITH OPPOSED BLADE DAMPER.

_ 1 1/2" POCKET SLIP

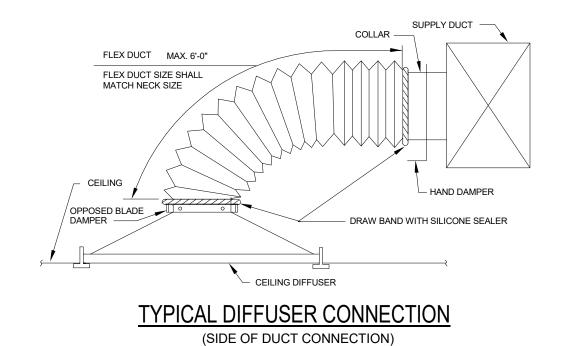
– SHEET METAL AS SPECIFIED FOR

AS SPECIFIED

1 1/2" MIN. TO 3" MAX. INSTALLED. 6"

NORMAL WITH MAT. TAUT.

4. PROVIDE WITH "W" SHAPED BLADE, 12 GAUGE HOT ROLLED STEEL CONSTRUCTION, 4-SIDED MOUNTING FRAME, AND COUNTERSUCK SECURITY FASTENERS. 5. PROVIDE WITH 3/16" STEEL CONSTRUCTION, SIGHT RESISTANT, DAMPER, 4-SIDED MOUNTING FRAME, AND COUNTERSUNK SECURITY FASTENERS.



NOT TO SCALE

SHEET METAL AS

RECTANGULAR FLEXIBLE CONNECTION DETAIL

SPECIFIED FOR

DUCTWORK

BOLT ON 4" CENTERS

- 1" X 1/8" BAND IRON

─ 1" FLANGE & HEM

ALTERNATE POSITION

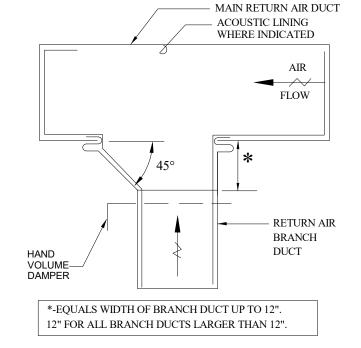
✓ FLANGED CONN.

ON FAN OR AIR

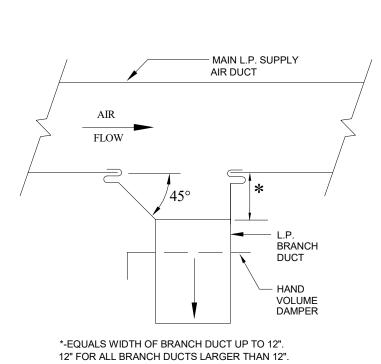
HANDLING UNIT

OF BOLT

12. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.







TYPICAL LOW PRESSURE **BRANCH DUCT TAKE-OFF**

Interior Design **Project Management** 622 Rood Avenue Grand Junction, CO 81501 970-242-1058 office BLYTHE GROUP + co.

MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

125 N SPRUCE ST **GRAND JUNCTION, CO 81501**

MECHANICAL - SCHEDULES

FOR CONSTRUCTION



REV. DESC.

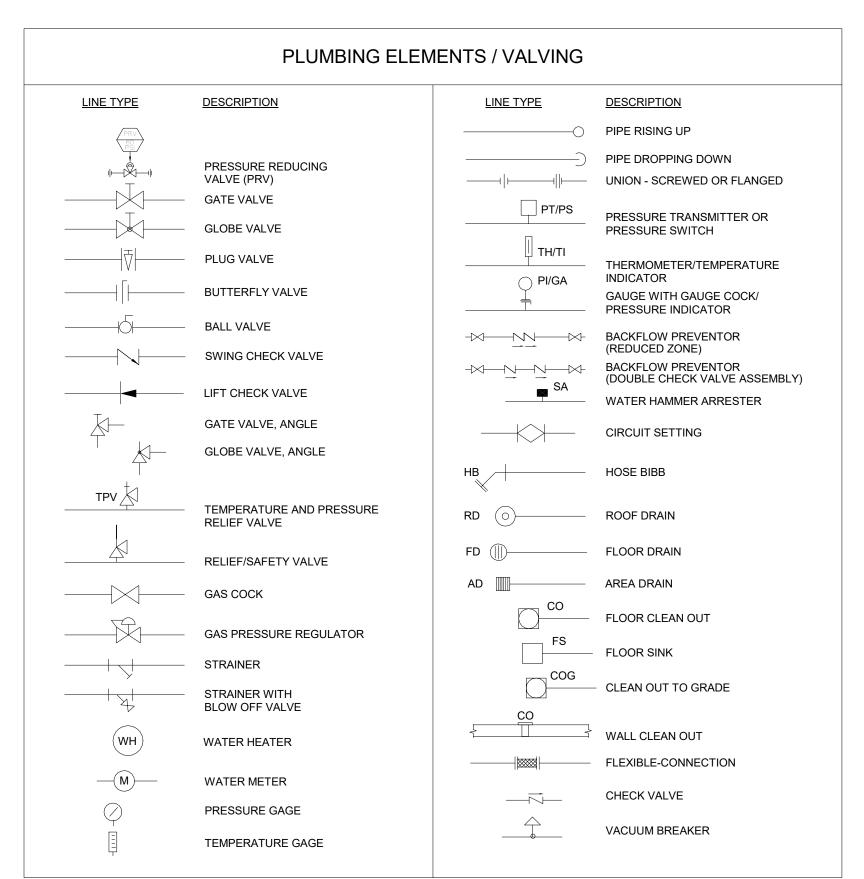
DATE: 08/30/2024 PROJECT #: 23040

M2-1



Project Team:

PLUMBING PIPE DESIGNATIONS LINE TYPE **DESCRIPTION** _____ 140 ____ HIGH TEMPERATURE (140°) WATER PIPE ----- COLD WATER PIPE (CW) CA COMPRESSED AIR — DC — DECONTAMINATION PIPING ———DER——— DEIONIZED WATER RETURN ———DES——— DEIONIZED WATER SUPPLY _____ DIS _____ DISTILLED WATER SUPPLY ——— DIR ——— DISTILLED WATER RETURN ------ CD ------ EQUIPMENT CONDENSATE DRAIN ——— FP ——— FIRE MAIN ----- GW ----- GREASE WASTE PIPE ——— HE ——— HELIUM — - - — HOT WATER RECIRCULATION (HWR) — - - — HOT WATER PIPE (HW) ———— H2 ———— HYDROGEN LPC LOW PRESSURE CONDENSATE ———LPS——— LOW PRESSURE STEAM ----- MA ----- MEDICAL AIR — G — NATURAL GAS PIPE ----- N2 ----- NITROGEN N2O NITROUS OXIDE ORD—OVERFLOW STORM WATER PIPE ----- O2 ----- OXYGEN PG PROPANE GAS RD ROOF DRAIN PIPE --- SOIL OR WASTE PIPE SOIL / OIL WASTE PIPE TOWER WATER RETURN TWS—TOWER WATER SUPPLY ----VAC----VACUUM — — — — VENT PIPE (V)



RESPONSIBLE DIVISION:

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND NON-FUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

SUBSCRIPT FOOTNOTES:

- 1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.
- 2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

ARRREVIATIONS.

<u>ABBR</u>	EVIATIONS:				
44"	MOUNTING HEIGHT ABOVE	(D)	DEMOLISHED ITEM	HD	HEAD (SEE SCHEDULES)
	FINISHED FLOOR TO CENTER			HP	HEAT PUMP
Α	OF DEVICE AMPS	DIA DIAG	DIAMETER DIAGRAM	HP HR	HORSEPOWER HOUR
A.D.	ACCESS DOOR	DIFF		HT	HEIGHT
AAV	AIR ADMITTANCE VALVE			HTR	HEATER
ABV	ABOVE	DIV		HWR	HEATING WATER RETURN
AC	AIR CONDITIONING UNIT	DN	DOWN	HWS	HEATING WATER SUPPLY
	ABOVE COUNTER	DS	DUCT SILENCER	HX	HEAT EXCHANGER
	AREA DRAIN (SEE SYMBOLS)	DWG	DRAWING DIRECT EXPANSION	HZ ID	HERTZ
A.F.C. A.F.G.	ABOVE FINISHED CEILING ABOVE FINISHED GRADE	DX (E)	DIRECT EXPANSION EXISTING ITEM	IG	INSIDE DIAMETER ISOLATED GROUND
AIC	AMPERE INTERRUPTING		EXHAUST AIR GRILLE/REGISTER	IN	INCHES
	CAPACITY	EAT	ENTERING AIR TEMPERATURE	INV	INVERT
AF	ARC FAULT CIRCUIT	EC		JBOX	JUNCTION BOX
	INTERRUPTERS	ECC	ECCENTRIC	K	KELVIN
A.F.F. AHU	ABOVE FINISHED FLOOR AIR HANDLING UNIT	EF EFF	EXHAUST FAN EFFICIENCY	KW KVA	KILOWATT KILO VOLT - AMPS
ALUM	ALUMINUM	EL	ELEVATION	L	LENGTH
AP	ACCESS PANEL OR DOOR	ELEC	ELECTRIC	LAT	LEAVING AIR TEMPERATURE
ATS	AUTOMATIC TRANSFER SWITCH	ELEV	ELEVATOR	LV	LAVATORY
AV	AUDIO / VIDEO	EM		LB	POUND
AVG AWG	AVERAGE AMERICAN WIRE GAGE		ENTERING ELECTRIC METALLIC TUBE	LD LF	LINEAR DIFFUSER LINEAR FEET
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL EQUAL	LIN	LINEAR
BB	BASEBOARD		EQUIPMENT	LIQ	LIQUID
BD	BACK DRAFT DAMPER	EQUIV	EQUIVALENT	LM	LUMEN
BFP	BACK FLOW PREVENTOR		END SWITCH	LRA	LOCKED ROTOR AMPS
BL	BOILER	ESP	EXTERNAL STATIC PRESSURE	LV	LOUVER
BLDG BLW	BUILDING BELOW	ET EWC	EXPANSION TANK ELECTRIC WATER COOLER	LVG LWT	LEAVING LEAVING WATER
BOB	BOTTOM OF BEAM	EWT	ENTERING WATER		TEMPERATURE
BOD	BOTTOM OF DUCT		TEMPERATURE	MBH	THOUSANDS OF BTU PER HOUR
BOP	BOTTOM OF PIPE	EX		MC	MECHANICAL CONTRACTOR
BSMT BTU	BASEMENT BRITISH THERMAL UNIT	EXPAN EXT	EXPANSION	MCA MCB	MINIMUM CIRCUIT AMPACITY
С	CHILLER	F	EXTERNAL DEGREES FAHRENHEIT	MD	MAIN CIRCUIT BREAKER MOTORIZED DAMPER
	COMBINATION ARC FAULT		FREE AREA	MDP	MAIN DISTRIBUTION PANEL
	CIRCUIT INTERRUPTERS	FC	FAN COIL UNIT	MED	MEDIUM
CAP	CAPACITY		FOOTCANDLE	MFR	MANUFACTURER
	CIRCUIT BREAKER CIRCUIT BALANCING VALVE	FCV FD	FLOW CONTROL VALVE FIRE DAMPER	MIN MISC	MINIMUM MISCELLANEOUS
CCT	CORRELATED COLOR	FD	FLOOR DRAIN	MLO	MAIN LUG ONLY
	TEMPERATURE	FIN	FINISHED	MOCP	MAXIMUM OVERCURRENT
CKT	CIRCUIT	FLA	FULL LOAD AMPS		PROTECTION
	CUBIC FEET PER HOUR	FLEX	FLEXIBLE	MTD	MOUNTED
CFM CHWR	CUBIC FEET PER MINUTE CHILLED WATER RETURN	FLR FOB	FLOOR FLAT ON BOTTOM	MUA N	MAKE-UP AIR UNIT NEUTRAL
CHWS	CHILLED WATER SUPPLY	FOT	FLAT ON TOP	NC	NORMALLY CLOSED
CI	CAST IRON	FP	FIRE PROTECTION	NEG	NEGATIVE
CL	CENTER LINE	FP	FIRE PUMP	NIC	NOT IN CONTRACT
	CEILING	FPM	FEET PER MINUTE	NL	NIGHT / SECURITY LIGHT - DO
CMU CO	CONCRETE MASONRY UNIT CLEAN OUT	FPS FS	FEET PER SECOND FLOW SWITCH	NO	NOT SWITCH NORMALLY OPEN
COL	COLUMN	FSD	FIRE/SMOKE DAMPER	NOM	NOMINAL
	COMPRESSOR	FT	FEET	NTS	NOT TO SCALE
CONC	CONCRETE	FXC	FLEXIBLE CONNECTION	OA	OUTSIDE AIR
COND	CONDENSATE	GND	GROUND	OBD	OPPOSED BLADE DAMPER
CONN CONT	CONNECTION CONTINUATION	GA GAL	GAUGE GALLON	OCC	ON CENTER OCCUPIED
	CONTRACTOR	GALV	GALVANIZED	OCP	OVER CURRENT PROTECTION
CRI	COLOR RENDERING INDEX	GEC	GROUND ELECTRODE	OD	OUTSIDE DIAMETER
CT	COOLING TOWER		CONDUCTOR	OL	OVERLOAD
CT	CURRENT TRANSFORMER	GF	GROUND FAULT CIRCUIT	ORD	OVERFLOW ROOF DRAIN
CU	CORDER	GC	INTERRUPTER GENERAL CONTRACTOR	OZ PBD	OUNCE
	COPPER CABINET UNIT HEATER	GPH	GENERAL CONTRACTOR GALLONS PER HOUR	PBD PBD	PARALLEL BLADE DAMPER PRESSURE DROP
CVB	CONSTANT VOLUME BOX	GPM	GALLONS PER MINUTE	PH	PHASE
CWR	CONDENSER WATER RETURN		GRAINS PER POUND	POS	POSITIVE PRESSURE
CWS	CONDENSER WATER SUPPLY	H 20	WATER	POS	POINT OF SALES
DB	DRY BULB	HB	HOSE BIBB	PRV	PRESSURE REDUCING VALVE
DEPT	DEPARTMENT			PS	PRESSURE SWITCH

Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road

Grand Junction, CO 81501 Phone: (970) 241-8709

SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

> QUANTITY RELOCATED ITEM

REGISTER

RETURN FAN RELATIVE HUMIDITY REHEAT COIL RATED LOAD AMPS

SHORT CIRCUIT SCA SHORT CIRCUIT AVAILABLE

SCCR SHORT CIRCUIT CURRENT

SMOKE EXHAUST FAN SUPPLY FAN SENSIBLE HEAT SHOWER STATIC PRESSURE

SPD SURGE PROTECTION DEVICE

STAINLESS STEEL

SAFETY SHOWER

TRANSFER GRILLE / REGISTER TAMPER RESISTANT

TEMPERATURE TRANSMITTER TELECOMMUNICATIONS TERMINAL BACKBOARD

STANDARD

SCHEDULE SMOKE DAMPER

SPEC SPECIFICATION

SQUARE

STEEL

SYSTEM TEMP TEMPERATURE

> TYPICAL TRANSFORMER

UNOCC UNOCCUPIED

VOLTS **VOLT AMPERE**

VALVE

WIDTH WATTS

WITH WITHOUT

WET BULB

WG WATER GAUGE

XFMR TRANSFORMER

WATER COLUMN WATER CLOSET

WEATHERPROOF

WPIU WEATHERPROOF IN-USE WSR WITHSTAND RATING

UNDERCUT DOOR UNIT HEATER

UNO UNLESS NOTED OTHERWISE

VAV VARIABLE AIR VOLUME UNIT

VTR VENT THROUGH ROOF

VFD VARIABLE FREQUENCY DRIVE

VRF VARIABLE REFRIGERANT FLOW

ROOM

RPM

STD

RD ROOF DRAIN RELIEF REQD REQUIRED

RETURN AIR GRILLE /

REVOLUTIONS PER MINUTE

SUPPLY AIR GRILLE / REGISTER

RCP REFLECTED CEILING PLAN

ES)	PSI PT PTAC	POUNDS PER SQUARE INCH PRESSURE TRANSMITTER PACKAGED TERMINAL AIR CONDITIONER	
URN	PV PVC QTY	PLUG VALVE POLYVINYL CHLORIDE QUANTITY	125 N SPRUCE ST GRAND JUNCTION, CO 81501

PLUMBING COVER SHEET

MESA COUNTY JUSTICE

CENTER SECOND FLOOR

RENOVATION

Interior Design

622 Rood Avenue

Project Management

970-242-1058 office

BLYTHE GROUP + co.

Grand Junction, CO 81501

FOR CONSTRUCTION

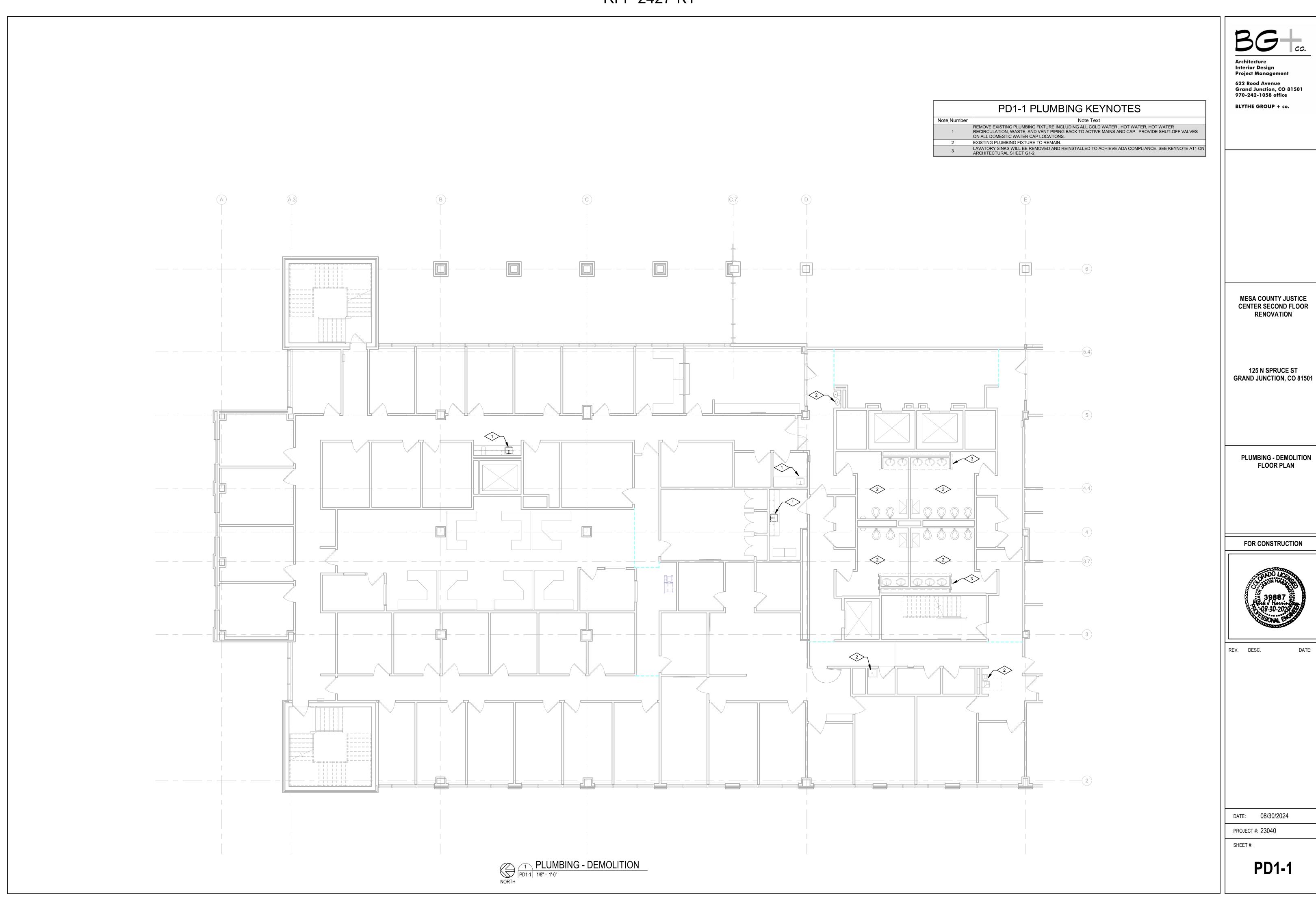


REV. DESC.

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P0-1

	PLUMBING SHEET LIST	
Sheet Number	Sheet Name	
P0-1	PLUMBING COVER SHEET	
PD1-1	PLUMBING - DEMOLITION FLOOR PLAN	
P1-1	PLUMBING - FLOOR PLAN	
P2-1	PLUMBING SCHEDULES	







P1-1 PLUMBING KEYNOTES				
Note Number	Note Text			
1	LAVATORY SINKS WILL BE REMOVED AND REINSTALLED TO ACHIEVE ADA COMPLIANCE. SEE KEYNOTE A11 ON ARCHITECTURAL SHEET G1-2.			
2	RELOCATE ACTUATOR VALVE SO THAT IT WILL POINT TOWARD TO WIDE SIDE OF WATER CLOSET ROOM TO ACHIEVE ADA COMPLIANCE. SEE KEYNOTE A8 ON ARCHITECTURAL SHEET G1-2			
3	TIE NEW 4" SANITARY LINE INTO 4"W-UP STACK RUNNING FROM FIRST FLOOF TO THIRD FLOOR. PLUMBING CONTRACTOR TO COORDINATE SANITARY WASTE LINE TIE IN LOCATION PRIOR TO BEGINNING ANY WORK.			
4	NEW 1-1/2" DOMESTIC COLD WATER AND 3/4" DOMESTIC HOT WATER LINE TO BE TIED INTO EXISTING 2" CW LINE AND 3/4" HW LINE IN CEILING OF FIRST FLOOR. PLUMBING CONTRACTOR TO COORDINATE COLD AND HOT WATER TIE IN LOCATIONS PRIOR TO BEGINNING ANY WORK.			

PLUMBING GENERAL NOTES:

1. DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS AND SIZES MAY VARY DURING FIELD COORDINATION & INSTALLATION OF MECHANICAL, PLUMBING, & ELECTRICAL. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.

3. ALL PLUMBING FIXTURES WITH QUICK CLOSING VALVES ON DOMESTIC COLD/HOT WATER SHALL BE PROVIDED WITH WATER HAMMER ARRESTOR.

2. PIPE DIMENSIONS DO NOT REFLECT ADDITIONAL DIMENSIONS FOR INSULATION. ALL PIPING

4. PROVIDE ISOLATION VALVES AT RESTROOMS TO ALLOW FOR TOTAL ISOLATION OF THE RESTROOM FROM THE REST OF THE DOMESTIC COLD AND HOT SYSTEMS.

5. ALL PLUMBING FIXTURES SHALL BE VENTED BY PLUMBING CONTRACTOR PER IPC

SHALL BE INSULATED PER 2018 IECC CODE REQUIREMENTS.

6. CONTRACTOR SHALL CLEAN AND SERVICE ALL EXISTING EQUIPMENT/PLUMBING FIXTURES TO REMAIN. CONTRACTOR SHALL VERIFY ALL EQUIPMENT/PLUMBING FIXTURES ARE PROPERLY FUNCTIONING PRIOR TO RE-USING EQUIPMENT/FIXTURES. CONTRACTOR TO INSURE THAT FINAL PLUMBING SYSTEM WILL OPERATE AS INTENDED ON PROVIDED DRAWINGS.

7. PLUMBING FIXTURE MANUFACTURERS AS SCHEDULED ON PLUMBING DRAWINGS ARE SUGGESTED MANUFACTURER'S AND MODELS. UNLESS NOTED OTHERWISE DUE TO OWNER/CLIENT REQUIREMENTS AND PREFERENCES. PLUMBING CONTRACTOR CAN SUBMIT EQUIVALENT FIXTURES FROM MANUFACTURERS THAT DIFFER FROM SCHEDULED PLUMBING FIXTURES. ALTERNATE MANUFACTURERS OF PLUMBING FIXTURES WILL BE REVIEWED FOR EQUIVALENCE OF PERFORMANCE AND FUNCTIONALITY BY ENGINEER.

8. PRIOR TO BIDDING OR BEGINNING ANY CONSTRUCTION, CONTRACTOR SHALL OBSERVE EXISTING CONDITIONS IN FIELD. CONTRACTOR SHALL OBSERVE AND CONFIRM FIELD LOCATIONS OF EXISTING DOMESTIC WATER AND SANITARY SEWER FOR SERVICE CONNECTIONS. CONTRACTOR SHALL VERIFY EXISTING SANITARY WASTE SEWER INVERT AT ANTICIPATED TIE IN LOCATION. CONFIRM NO OBSTACLES ARE IN PATH OF ANTICIPATED GRAVITY SANITARY SEWER TIE IN LOCATION AND INVERT IS ADEQUATE.

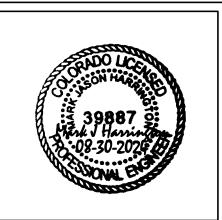
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MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

125 N SPRUCE ST GRAND JUNCTION, CO 81501

PLUMBING - FLOOR PLAN

FOR CONSTRUCTION



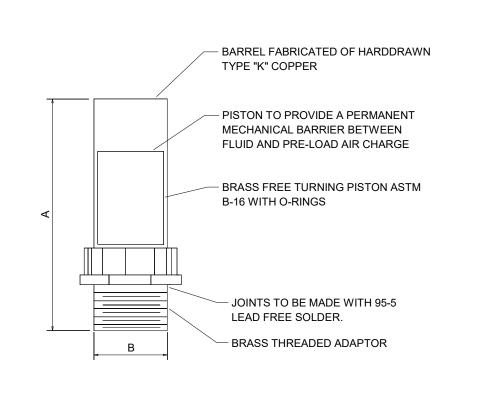
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DATE: 08/30/2024

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P1-1

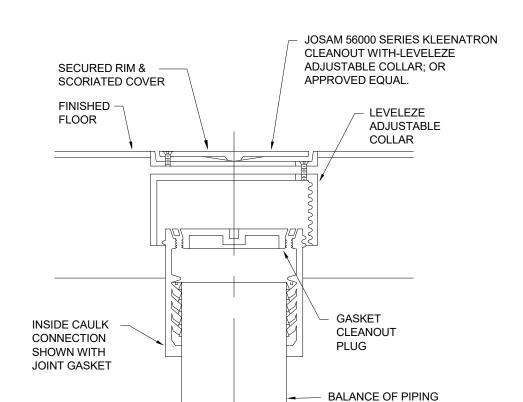


PPP SIZE	P.D.I. SYMBOL	FIXTURE UNIT RATINGS	A SIZE	B SIZE
1/2"	Α	1 - 11	5"	1/2"
3/4"	В	12 - 32	5"	3/4"
1"	С	33 - 60	7"	1"
1-1/4"	D	61 - 113	7"	1-1/4"
1-1/2"	E	114 - 154	9"	1-1/2"
2"	F	155 - 330	9"	2"

WATER SHOCK ARRESTOR DETAIL

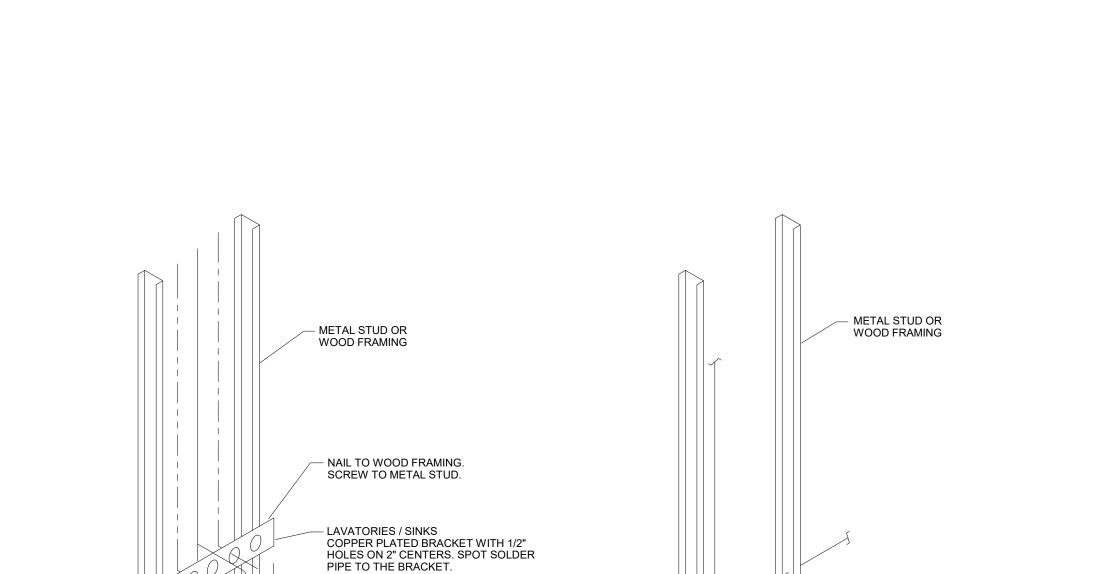
NOTE: SEE WATER RISER DIAGRAMS FOR LOCATIONS

OF SHOCK ABSORBERS.



FLOOR CLEANOUT DETAIL

NOT TO SCALE



NAIL TO WOOD FRAMING.

SCREW TO METAL STUD. -

LAV./SINK PIPE SUPPORT DETAIL

NOT TO SCALE

SUPPLY PIPE SUPPORT FOR

WALL OR CABINET MTD.

LAVATORY OR SINK

WATER CLOSET PIPE SUPPORT DETAIL

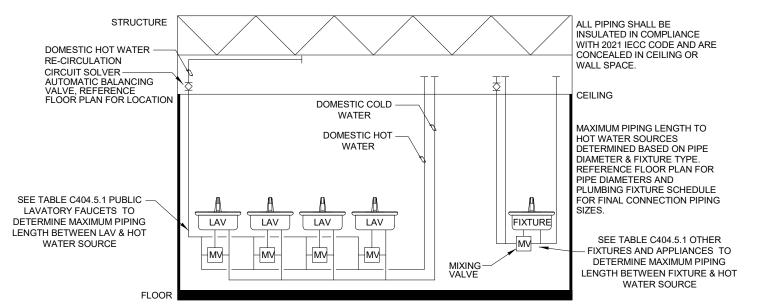
TANK TYPE WATER CLOSET OR HOSE BIBB COPPER PLATED BRACKET FOR 1/2" OR 3/4" COPPER PIPE. SPOT SOLDER

PIPE TO THE BRACKET.

SUPPLY PIPE SUPPORT FOR

TANK TANK FLOOR MTD

WATER CLOSET



SAME AS CLEANOUT

TO GRADE

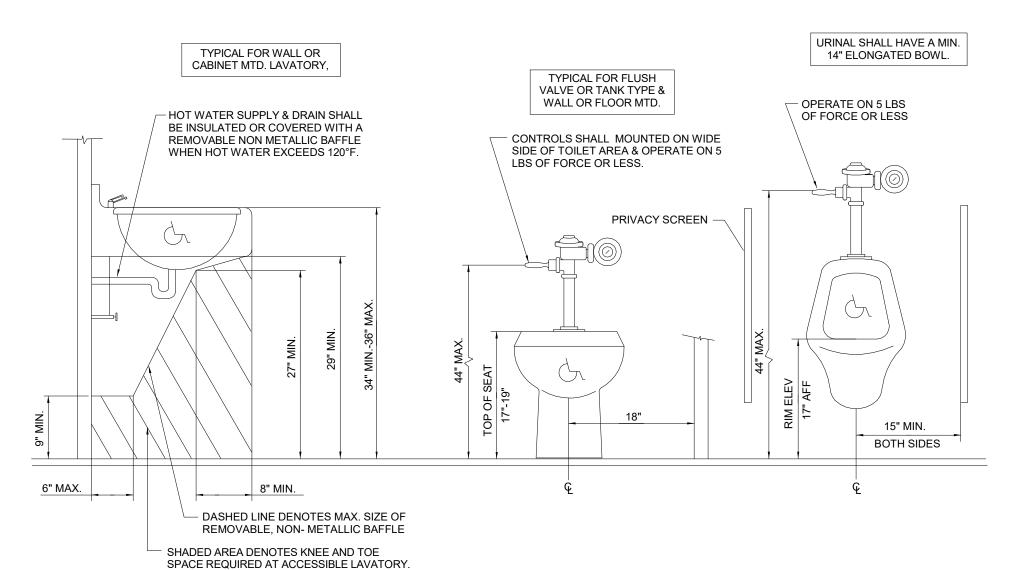
	TABLE C404.5.1 PIPING VOLUME AND	MAXIMUM PIPING LENGTHS		
NOMINAL PIPE SIZE	VOLUME	MAXIMUM PIPING LENGTH (FEET)		
(INCHES)	(LIQUID OUNCES PER FOOT LENGTH)	PUBLIC LAVATORY FAUCETS	OTHER FIXTURES AND APPLIA	
1/4	0.33 = .0026 GAL	6 FT.	50 FT.	
5/16	0.5 = .0039 GAL	4 FT.	50 FT.	
3/8	0.75 = .0059 GAL	3 FT.	50 FT.	
1/2	1.5 = .0117 GAL	2 FT.	43 FT.	
5/8	2 = .0156 GAL	1 FT.	32 FT.	
3/4	3 = .0234 GAL	0.5 FT.	21 FT.	
7/8	4 = .0313 GAL	0.5 FT.	16 FT.	
1	5 = .0391 GAL	0.5 FT.	13 FT.	
1-1/4	8 = .0625 GAL	0.5 FT.	8 FT.	
1-1/2	11 = .0859 GAL	0.5 FT.	6 FT.	
2 OR GREATER	18 = .1406 GAL	0.5 FT.	4 FT.	

1. FOR SI: 1 INCH = 25.4 MM, 1 FOOT = 304.8 MM, 1 LIQUID OUNCE = 0.030 L, 1 GALLON = 128 OUNCES.

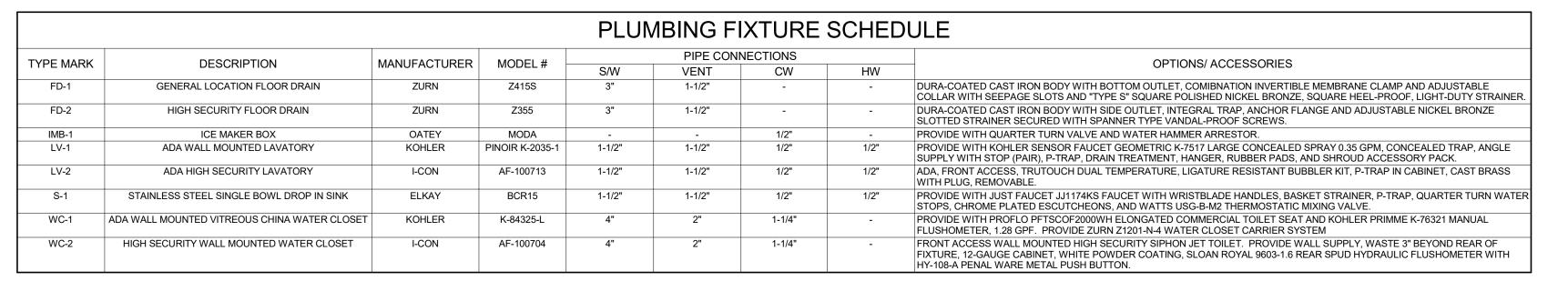
2. FOR ALL PUBLIC LAVATORYS CONTRACTOR TO INSTALL

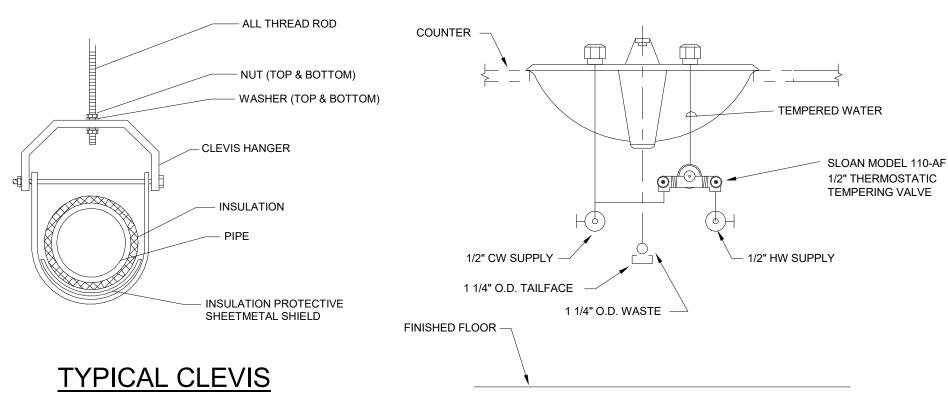
HOT WATER SOURCE WITHIN MAXIMUM PIPING LENGTH. ANY OTHER TYPE FIXTURE OR APPLIANCE SHALL HAVE HOT WATER SOURCE WITHING ALTERNATIVE MAXIMUM PIPING LENGHT, SEE TABLE ABOVE.

DOMESTIC HOT WATER RECIRCULATION DISTANCE FROM FIXTURES



HANDICAP PLUMBING FIXTURE INSTALLATION

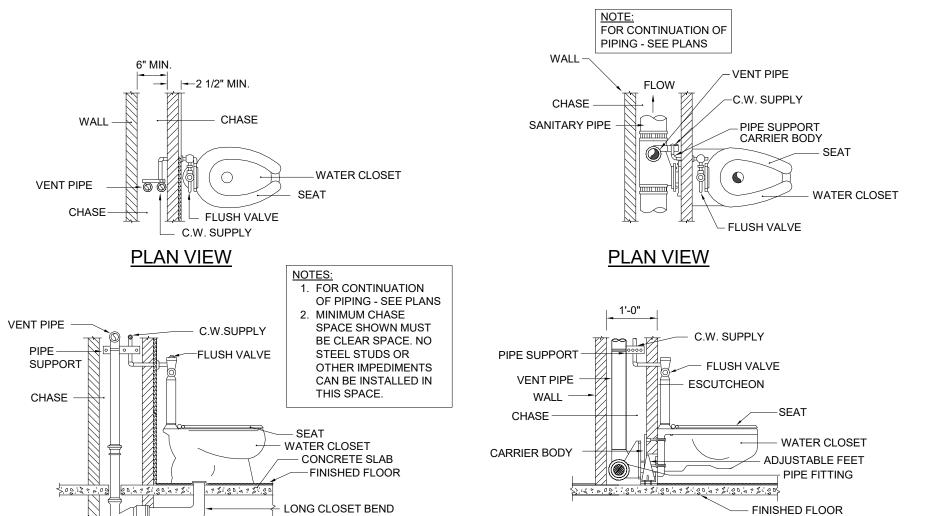




HANGER DETAIL

NOT TO SCALE

LOCAL MIXING VALVE DETAIL



FLOOR MOUNT WATER CLOSET
DETAIL, SINGLE

ELEVATION

SANITARY MAIN

WALL MOUNT WATER CLOSET DETAIL, SINGLE

ELEVATION

FLUID OPERATING	INSULA	TION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
TEMPERATURE RANGE AND USAGE (°F)	CONDUCTIVITY (BTU*IN/(HR*FT*°F))	MEAN RATING TEMPERATURE (°F)	<1	1 TO < 1-1/2	1-1/2 TO < 4	4 TO < 8	≥8	
>350	.3234	250	4.5	5.0	5.0	5.0	5.0	
251-350	.2932	200	3.0	4.0	4.5	4.5	4.5	
201-250	.273	150	2.5	2.5	2.5	3.0	3.0	
141-200	.2529	125	1.5	1.5	2.0	2.0	2.0	
105-140	.2128	100	1.0	1.0	1.5	1.5	1.5	
40-60	.2127	75	0.5	0.5	1.0	1.0	1.0	
<40	.2026	50	0.5	1.0	1.0	1.0	1.5	

> SUSPENDED CEILING

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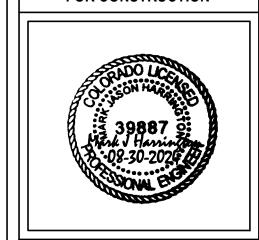
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MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

125 N SPRUCE ST GRAND JUNCTION, CO 81501

PLUMBING SCHEDULES

FOR CONSTRUCTION



REV. DESC. DATE:

DATE: 08/30/2024

SHEET #:

PROJECT #: 23040

P2-1

BRANCH CIRCUIT PANELBOARD

MOTOR STARTER

LA-7 CIRCUITRY HOMERUN: PANEL LA - CIR. #7

CONTACTOR

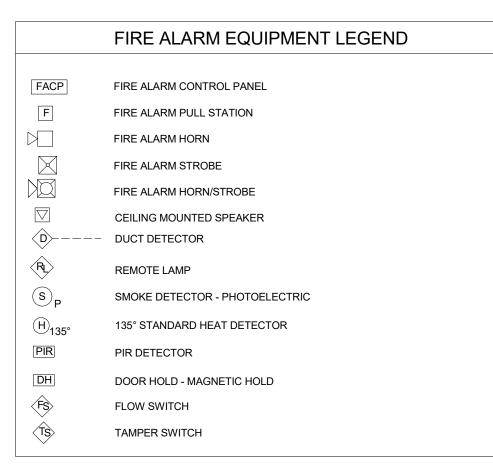
ELECTRIC MOTOR

TELEPHONE TERMINAL BOARD

ELECTRICAL EQUIPMENT LEGEND

FUSED SAFETY SWITCH / DISCONNECT COMBINATION

CONDUIT OR WIRE CONCEALED IN WALL/CLG. (SOLID LINE TYPE)



COMMUN	NICATION LEGEND
9	CLOCK ONLY
	CLOCK / PA SPEAKER WALL MOUNTED
S	ROUND CEILING MOUNTED SPEAKER
S	SQUARE SPEAKER
HC	INTERCOM PUSH TO CALL SWITCH
WAP	WIRELESS ACCESS POINT ABOVE THE CEILING
PROJECTOR	ABOVE THE CEILING PROJECTOR CONNECTION
□ HDMI	WALL MOUNTED HDMI
	PLAIN DATA OUTLET
▽80"	PLAIN DATA OUTLET WITH MOUNTING HEIGHT
A	COMBINATION DATA/TELEPHONE
T	FLOOR MOUNTED COMBINATION DATA/TELEPHONE
\bigcirc	CEILING MOUNTED COMBINATION DATA/TELEPHONE
	TELEVISION OUTLET

SECURITY SYSTEM LEGEND SECURITY CAMERA ADA DOOR OPERATOR PUSH BUTTON

CARD READER FOR DOOR OPERATOR

ELECTRIC DOOR STRIKE

MICROPHONE OUTLET (PER SYSTEM REQUIREMENTS)

GENERAL ELECTRICAL NOTES:

- 1. ALL ELECTRICAL WORK TO COMPLY WITH LATEST EDITION OF NEC, IECC AND ALL APPLICABLE GOVERNING CODES.
- FIELD COORDINATION DURING CONSTRUCTION IS IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES.
- 3. ELECTRIC UTILITY TO ADVISE OWNER AND/OR THE ELECTRICAL ENGINEER PRIOR TO SERVICE MODIFICATION REQUIRING COST TO THE OWNER.

- 1. ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWING, FIELD VERIFY ALL CONDITIONS PRIOR TO ROUGH-IN.
- 2. ALL CONDUITS AND CONVEYANCES SHALL BE CONCEALED. IN THE EVENT THAT A NEW DEVICE IS BEING INSTALLED IN AN EXISTING DRYWALL PARTITION, PROVIDE A CUT IN TYPE BOX AND FISH FLEXIBLE CONDUIT DOWN INSIDE THE WALL FROM ABOVE THE CEILING AND REPAIR THE DRYWALL AROUND THE
- CONDUIT. TRANSITION TO EMT ONCE ABOVE THE CEILING. 3. SIZES OF WIRE AND CABLES ARE BASED UPON COPPER CONDUCTORS, UNLESS OTHERWISE INDICATED. ALL CIRCUITS SHALL CONTAIN (2) #12 AWG WITH (1) #12 GND IN 1/2" CONDUIT UNLESS NOTED OTHERWISE.
- 4. ALL BRANCH CIRCUITS WITH HOME RUNS OVER 50 FEET, WILL BE SIZED ONE SIZE LARGER.
- 5. ALL PENETRATIONS IN OR THROUGH FIRE RATED PARTITIONS SHALL BE FIRE STOPPED IN SUCH A WAY THAT THE PENETRATION MATCHES THE FIRE RATING OF THE WALL.
- 6. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION
- BETWEEN THE APPROPRIATE DISCIPLINES AND CONTRACTORS. COORDINATE ALL DEVICE, FIXTURE AND HARDWARE COLOR SELECTIONS WITH THE ARCHITECT PRIOR TO MAKING SHOP DRAWING SUBMITTALS.
- COORDINATE THE MOUNTING HEIGHTS OF ALL RECEPTACLES MOUNTED ABOVE COUNTERS, CASEWORK AND APPLIANCE RECEPTACLES WITH ARCHITECTURAL
- 9. BRANCH CIRCUIT AND SPECIAL SYSTEMS WIRING FOR DEVICES ON WALLS IN FINISHED AREAS WHICH CANNOT BE CONCEALED SHALL BE INSTALLED IN SURFACE MOUNTED RACEWAY.
- 10. ALL EXPOSED CONDUITS, BOXES, ETC. IN ROOMS TO BE PAINTED SHALL BE PAINTED TO MATCH THE SURROUNDING SURFACE. EXPOSED CONDUITS, BOXES, ETC. IN ROOMS WHICH ARE NOT PAINTED MAY BE LEFT UN-PAINTED. EXPOSED CONDUIT, BOXES, ETC. ON THE EXTERIOR OF BUILDINGS SHALL BE PAINTED TO MATCH THE SURROUNDING SURFACE AS CLOSELY AS POSSIBLE.
- 11. THE CONTRACTOR IS RESPONSIBLE FOR PATCHING, PAINTING, REPAIRING OR REPLACEMENT OF ALL WALLS, CEILING OR OTHER BUILDING ELEMENTS WHICH ARE DISTURBED AS PART OF THE DEMOLITION AND/OR INSTALLATION OF ELECTRICAL WORK.
- 12. PROVIDE ELECTRICAL CONNECTION TO ALL FIRE, SMOKE, AND FIRE / SMOKE DAMPERS INCLUDING POWER AND FIRE ALARM. VERIFY EXACT SIZE AND FINAL LOCATION OF ALL DAMPERS WITH THE MECHANICAL CONTRACTOR. ALL ROOFTOP UNITS RATED AT MORE THAN 2000 CFM WILL BE OUTFITTED WITH A DUCT DETECTOR IN THE RETURN DUCT. ALL ROOFTOP UNITS RATED AT MORE THAN 15000 CFM WILL BE OUTFITTED WITH A DUCT DETECTOR IN BOTH THE SUPPLY AND RETURN DUCT AT ROOFTOP LEVEL AND IN THE RETURN DUCT AT EVERY LEVEL THAT IS SERVED. ELECTRICAL CONTRACTOR WILL PROVIDE A REMOTE TEST STATION AND ALL WIRING NECESSARY TO COMPLETE INSTALLATION.
- 13. REFER TO THE MECHANICAL EQUIPMENT SCHEDULE FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH PLUMBING AND HVAC EQUIPMENT AND OWNER/GENERAL CONTRACTOR FURNISHED EQUIPMENT.

LIGHTING LEGEND SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON

THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS: HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR, THE ITEM SHALL BE PROVIDED AND INSTALLED. VARIATION AND/OR COMBINATION MAY BE USED ON THE PLANS.

A NUMBER NEXT TO A RECEPTACLE OR DEVICE INDICATES A CIRCUIT NUMBER. AN UPPER CASE LETTER NEXT TO A SWITCH INDICATES THE FUNCTION OF THE SWITCH. A LOWER CASE LETTER INDICATES THE SWITCH CIRCUIT.

SWITCHES

 $\$_{3D}$ 3 WAY DIMMER SWITCH - (4D INDICATES A 4WAY DIMMER)

\$MO DUAL TECHNOLOGY MOTION / OCCUPANCY SENSOR LIGHT SWITCH

(OS)(OS) CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH

LIGHT FIXTURES

A 1'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED

2'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID,

2'x2' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID,

(MA) (MA) CEILING MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR

\$ SINGLE POLE SWITCH

THREE-WAY SWITCH

\$DR DOOR ACTIVATED SWITCH

\$_{LV} LOW VOLTAGE LIGHT SWITCH

\$ KEY OPERATED LIGHT SWITCH

\$SC SCENE CONTROL STATION

OPEN STRIP FIXTURE

LUMINAIRES:

WALL BRACKET LINEAR FIXTURE

\$_{OS} AUTO ON / AUTO OFF LIGHT SWITCH

\$_T MANUAL ON - TIMED OFF LIGHT SWITCH

\$MA MANUAL ON / AUTO OFF DIMMING LIGHT SWITCH

\$_{MS} UNIT LIGHTING MANAGEMENT CONTROL STATION,

FLANGE OR SURFACE MOUNTED

FLANGE OR SURFACE MOUNTED

A — WALL MOUNTED SCONCE LIGHT FIXTURE

A - O- SURFACE CEILING OR PENDANT MOUNTED FIXTURE

EX2 DOUBLE FACE EXIT SIGN, WALL AND CEILING MOUNTED

EX1 SINGLE FACE EXIT SIGN, WALL AND CEILING MOUNTED

1. COORDINATE THE LOCATION OF ALL LIGHTING EQUIPMENT INCLUDING BUT

NOT LIMITED TO THE LUMINAIRES, SWITCHES WITH THE ARCHITECTURAL,

REQUIRED. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR

STRUCTURAL AND MECHANICAL DRAWINGS AND ALL OTHER TRADES AS

2. LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE AND

3. THE ELECTRICAL CONTRACTOR IS TO CONFIRM THE LIGHT FIXTURES ORDERED

4. VERIFY LUMINAIRE MOUNTING REQUIREMENTS AND OVERALL HEIGHT OF ALL

ARCHITECTURAL REFLECTED CEILING PLANS, NOTIFY THE ENGINEER OF ANY

WILL BE COMPATIBLE WITH THE CEILING TYPES AS SHOWN ON THE

5. ALL LIGHT FIXTURES NEED TO BE COMPATIBLE WITH THE SWITCHES AND

6. THE LIGHTING PACKAGE SHALL BE APPROVED BY BOTH THE ARCHITECT AND

ORDERED UNTIL THE LIGHT FIXTURE SUBMITTAL PACKAGE HAS BEEN

7. COORDINATE LUMINAIRE MOUNTING REQUIREMENTS PRIOR TO PLACING

1. PROVIDE EMERGENCY AND EXIT SIGNS AS PER ALL GOVERNING CODES.

FOR EGRESS AWAY FROM THE BUILDING.

b. REMOTE INFRARED HANDHELD DEVICE

THE BEST VISIBILITY POSSIBLE

a. INTEGRAL TEST SWITCH

REQUIRED TESTS.

EMERGENCY LIGHTING PER CODE.

2. EXIT SIGNS CONNECTED TO A REMOTE EMERGENCY HEAD REQUIRE EXTRA

3. REFER TO THE PLANS FOR THE NUMBER OF FACES REQUIRED AT EACH EXIT.

4. ALL LIGHTING FIXTURES DENOTED WITH "EM" SHALL BE PROVIDED WITH AN

5. ALL LIGHT FIXTURES DESIGNATED WITH "EM" OR SPECIFIED WITH AN

BATTERY CAPACITY TO OPERATE THE REMOTELY LOCATED EMERGENCY HEAD

FIELD ADJUST THE LOCATION OF THE EXIT SIGNS AND NUMBER OF FACES FOR

ENGINEER APPROVED EMERGENCY LED DRIVER OR INVERTER TO OPERATE THE

FIXTURE IN AN EMERGENCY MODE TO MEET ALL CURRENT GOVERNING CODES

AND WILL BE CIRCUITED TO THE UNSWITCHED SIDE OF THE LIGHTING CIRCUIT.

EMERGENCY FUNCTION SHALL BE PROVIDE WITH ONE OF THE FOLLOWING.

c. INTEGRAL ELECTRONIC DEVICE THAT AUTOMATICALLY PERFORMS CODE

6. ALL STAIRWELLS AND PATHS OF EGRESS TO THE EXTERIOR DOORS AND THE

EXTERIOR PATH OF EGRESS AWAY FROM THE BUILDING SHALL RECEIVE

ENGINEER AS APPROVED EQUAL BEFORE BID. NO LIGHT FIXTURE SHALL BE

APPROVED IN WRITING BY THE ARCHITECT, GENERAL CONTRACTOR AND

SHALL NOT BE SUPPORTED FROM THE T-BAR CEILING GRID.

DISCREPANCIES PRIOR TO ORDERING THE FIXTURES.

PENDANT MOUNTED FIXTURES PRIOR TO ORDERING.

ELECTRICAL ENGINEER.

EMERGENCY AND EXIT LIGHTS:

ORDER.

A - RECESSED DOWNLIGHT CAN FIXTURE

EM () WALL MOUNTED EMERGENCY LIGHT

DIMENSIONAL LOCATION OF LIGHT FIXTURES.

EMR 🗎 EMERGENCY EXTERIOR EGRESS FIXTURE

\$TO MANUAL MOTOR STARTER

\$ PILOT LIGHT SWITCH

FOUR-WAY SWITCH

DIMMER SWITCH

\$2 TWO POLE SWITCH

AN UPPER CASE LETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. REFER TO THE LUMINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS. A LOWER CASE LETTER NEXT TO A LIGHT CORRESPONDS TO THE SWITCH DESIGNATION.

WALL MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR

CIRCUIT BREAKER IN A PANEL BOARD PAD MOUNTED UTILITY TRANSFORMER FUSED DISCONNECT 100A = AMP RATING 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1 = PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE 3PH, 4 WIRE = PANEL PHASE, DISTRIBUTION TYPE	PAD MOUNTED UTILITY TRANSFORMER FUSED DISCONNECT 100A = AMP RATING 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT M ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BRE		RIBUTION GEAR
FUSED DISCONNECT 100 A = AMP RATING 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT M ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1 = PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE	FUSED DISCONNECT 100 A 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT M ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BRE		CIRCUIT BREAKER IN A PANEL BOARD
100 A 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1= PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE	100 A 2P = NUMBER OF POLES 2 POLE FUSED DISCONNECT M ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BRE		PAD MOUNTED UTILITY TRANSFORMER
FUSED DISCONNECT ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1= PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE	FUSED DISCONNECT M ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS C ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BRE	100 A	100A = AMP RATING
ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1= PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE	ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS Control Control		NECT
ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKE PP1= PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE	$ \circ \rangle$ $ \mid \forall \mid$ ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BRI	M	ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS
' 3PH, 4 WIRE = PANEL PHASE, DISTRIBUTION TYPE	225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE		225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE

ELECTRIC	CAL DEVICE LEGEND
J	CEILING JUNCTION BOX - SURFACE/FLUSH
<u>J</u> H	WALL JUNCTION BOX - SURFACE/FLUSH
\Rightarrow	DUPLEX RECEPTACLE
	FLOOR MOUNTED RECEPTACLE
\Rightarrow	SPLIT WIRED DUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	FLOOR MOUNTED FOURPLEX RECEPTACLE
\Rightarrow	APPLIANCE RECEPTACLE - 3 WIRE
\ominus	DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
AC GF AC USB AF AF USB AF GF C D D USB EM	ATIONS PERTAIN TO ALL DUPLEX AND FOURPLEX RECEPTACLES: ABOVE COUNTER ABOVE COUNTER - GROUND FAULT CIRCUIT INTERRUPTER ABOVE COUNTER WITH USB PORT ARC FAULT PROTECTED ARC FAULT PROTECTED WITH USB PORT ARC FAULT WITH GROUND FAULT CIRCUIT INTERRUPTER CONTROLLED RECEPTACLE - SEE DETAIL DEDICATED RECEPTACLE DEDICATED RECEPTACLE WITH USB PORT RECEPTACLE CIRCUITED TO THE EMERGENCY PANEL WITH COVER PLATE GROUND FAULT CIRCUIT INTERRUPTER WEATHER PROOF GROUND FAULT CIRCUIT INTERRUPTER PLUG LOAD GENERAL PURPOSE WITH MOUNTING HEIGHT. ELECTRIC HAND DRYER THERMOSTAT OPEN/CLOSE/STOP PUSH BUTTON

	ELECTRICAL SHEET LIST
Sheet Number	Sheet Name
E0-1	ELECTRICAL COVER SHEET
ED1-1	LIGHTING - DEMOLITION FLOOR PLAN
ED2-1	ELECTRICAL - DEMOLITION FLOOR PLAN
E1-1	LIGHTING - REFLECTED CEILING PLAN
E1-2	LIGHTING DETAILS
E2-1	ELECTRICAL - FLOOR PLAN
E3-1	ELECTRICAL SCHEDULES
E3-2	ELECTRICAL SCHEDULES
E3-3	ELECTRICAL SCHEDULES
E3-4	ELECTRICAL DETAILS

DRAWING KEY NOTES

ROOM DESIGNATION

RESPONSIBLE DIVISION:

ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND NON-FUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR				
STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING.

1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.

2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

DEMOLISHED ITEM

DIAMETER

DIVISION

DRAWING

ECCENTRIC

EFFICIENCY

ELEVATION

ELECTRIC

EQUAL

EQUIP EQUIPMENT

EQUIV EQUIVALENT

ES END SWITCH

EX EXHAUST

EXT EXTERNAL

FI FX FLEXIBLE

GND GROUND

H 2O WATER

GAUGE

GALLON

GALVANIZED

GEC GROUND ELECTRODE

CONDUCTOR

INTERRUPTER

GPM GALLONS PER MINUTE

GRS/LB GRAINS PER POUND

HOSE BIBB

GROUND FAULT CIRCUIT

GENERAL CONTRACTOR

GALLONS PER HOUR

FLOOR

FOB FLAT ON BOTTOM

FIRE PUMP

FLAT ON TOP

FIRE PROTECTION

FEET PER MINUTE

FEET PER SECOND

FIRE/SMOKE DAMPER

FLOW SWITCH

FXC FLEXIBLE CONNECTION

FIR

GA

EXPAN EXPANSION

ELEV ELEVATOR

EQ

EXHAUST FAN

DOWN

DIFFERENTIAL

DUCT SILENCER

FXISTING ITEM

DIRECT EXPANSION

EXHAUST AIR GRILLE/REGISTER

ENTERING AIR TEMPERATURE

ELECTRICAL CONTRACTOR

EMERGENCY FUNCTION

EMT ELECTRIC METALLIC TUBE

ESP EXTERNAL STATIC PRESSURE

EWC ELECTRIC WATER COOLER

DEGREES FAHRENHEIT

FLOW CONTROL VALVE

EXPANSION TANK

ENTERING WATER

TEMPERATURE

FREE AREA

FAN COIL UNIT

FOOTCANDLE

FIRE DAMPER

FLOOR DRAIN

FULL LOAD AMPS

FINISHED

DIAG DIAGRAM

DISCH DISCHARGE

DRINKING FOUNTAIN

ABBREVIATIONS:

OF DEVICE

ABOVE

ACCESS DOOR

A.D.

MOUNTING HEIGHT ABOVE

AIR ADMITTANCE VALVE

AIR CONDITIONING UNIT

AMPERE INTERRUPTING

ACCESS PANEL OR DOOR

AUTOMATIC TRANSFER SWITCH

BUILDING AUTOMATION SYSTEM

AREA DRAIN (SEE SYMBOLS)

ABOVE COUNTER

A.F.C. ABOVE FINISHED CEILING

A.F.G. ABOVE FINISHED GRADE

INTERRUPTERS

A F F ABOVE FINISHED FLOOR

AHU AIR HANDLING UNIT

AUDIO / VIDEO AVFRAGE

AWG AMERICAN WIRE GAGE

BASEBOARD

BOII FR

BOB BOTTOM OF BEAM

BOD BOTTOM OF DUCT

BTU BRITISH THERMAL UNIT

CAFCI COMBINATION ARC FAULT

CIRCUIT BREAKER

ΓEMPERATURE

CFM CUBIC FEET PER MINUTE

CHWR CHILLED WATER RETURN

CHWS CHILLED WATER SUPPLY

CMU CONCRETE MASONRY UNIT

COLOR RENDERING INDEX

CURRENT TRANSFORMER

COOLING TOWER

CONDENSING UNIT

CABINET UNIT HEATER

CWR CONDENSER WATER RETURN

CWS CONDENSER WATER SUPPLY

CONSTANT VOLUME BOX

CAST IRON

CLG CEILING

COL COLUMN

CONC CONCRETE

COMP COMPRESSOR

COND CONDENSATE

CONN CONNECTION

CONT CONTINUATION

COPPER

DRY BULB

DEPT DEPARTMENT

CONTR CONTRACTOR

CENTER LINE

CLEAN OUT

CORRELATED COLOR

CUBIC FEET PER HOUR

CIRCUIT INTERRUPTERS

CIRCUIT BALANCING VALVE

BOP BOTTOM OF PIPE

CHILLER

CIRCUIT

BLDG BUILDING

BSMT BASEMENT

CAP CAPACITY

CB

CBV

CKT

BLW BELOW

BACK DRAFT DAMPER

BACK FLOW PREVENTOR

ALUM ALUMINUM

FINISHED FLOOR TO CENTER

Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road Grand Junction, CO 81501

Phone: (970) 241-8709

SUBSTITUTIONS:

HEAD (SEE SCHEDULES)

HEATING WATER SUPPLY

LEAVING AIR TEMPERATURE

HEAT PUMP

HOUR

HEIGHT

HEATER

INCHES

JBOX JUNCTION BOX

KILOWATT

KVA KILO VOLT - AMPS

POUND

LINEAR

LIQUID

LUMEN

LOUVER

LWT LEAVING WATER

LVG LEAVING

MED MEDIUM

MIN MINIMUM

MTD MOUNTED

NEG NEGATIVE

NOM NOMINAL

OBD

NTS NOT TO SCALE

OC ON CENTER

OCC OCCUPIED

OUTSIDE AIR

OD OUTSIDE DIAMETER

ORD OVERFLOW ROOF DRAIN

PBD PARALLEL BLADE DAMPER

PRV PRESSURE REDUCING VALVE

PRESSURE SWITCH

PRESSURE DROP

POS POSITIVE PRESSURE

POS POINT OF SALES

OVERLOAD

OUNCE

MFR MANUFACTURER

MISC MISCELLANEOUS

MLO MAIN LUG ONLY

LF

LM

LINEAR DIFFUSE

LINEAR FEET

LRA LOCKED ROTOR AMPS

TEMPERATURE

MCB MAIN CIRCUIT BREAKER

MCA MINIMUM CIRCUIT AMPACITY

MOTORIZED DAMPER

MDP MAIN DISTRIBUTION PANEL

MOCP MAXIMUM OVERCURRENT

NORMALLY CLOSED

NIGHT / SECURITY LIGHT - DO

OPPOSED BLADE DAMPER

OCP OVER CURRENT PROTECTION

NOT IN CONTRACT

NORMALLY OPEN

NOT SWITCH

PROTECTION

MUA MAKE-UP AIR UNIT

NEUTRAL

THOUSANDS OF BTU PER HOUR

MECHANICAL CONTRACTOR

HORSEPOWER

HWR HEATING WATER RETURN

HEAT EXCHANGER

INSIDE DIAMETER

ISOLATED GROUND

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS. OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED. PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

QTY

POUNDS PER SQUARE INCH

PRESSURE TRANSMITTER

PTAC PACKAGED TERMINAL AIR

POLYVINYL CHLORIDE

RELOCATED ITEM

RETURN AIR GRILLE /

RCP REFLECTED CEILING PLAN

RELATIVE HUMIDITY

REVOLUTIONS PER MINUTE

SHORT CIRCUIT AVAILABLE

SUPPLY AIR GRILLE / REGISTER

RATED LOAD AMPS

SHORT CIRCUIT

SMOKE DAMPER

SUPPLY FAN

SENSIBLE HEAT

STATIC PRESSURE

STAINLESS STEEL

SAFETY SHOWER

TAMPER RESISTANT

TELECOMMUNICATIONS

TERMINAL BACKBOARD

SURGE PROTECTION DEVICE

TRANSFER GRILLE / REGISTER

TEMPERATURE TRANSMITTER

SHOWER

SPEC SPECIFICATION

SQUARE

STANDARD

STEEL

SYSTEM

TEMP TEMPERATURE

TYPICAL

UNOCC UNOCCUPIED

URINAL

VOLTS

VALVE

VOLT VOLTAGE

WIDTH

WATTS

WITH

WITHOUT

WET BULB WATER COLUMN

WATER CLOSET

WEATHERPROOF

WPIU WEATHERPROOF IN-USE

WATER GAUGE

WSR WITHSTAND RATING

XFMR TRANSFORMER

TRANSFORMER

UNIT HEATER

VOLT AMPERE

UNDERCUT DOOR

UNO UNLESS NOTED OTHERWISE

VARIABLE AIR VOLUME UNIT

VARIABLE FREQUENCY DRIVE

VENT THROUGH ROOF

VARIABLE REFRIGERANT FLOW

STL

VFD

VTR

WB

SMOKE EXHAUST FAN

SCCR SHORT CIRCUIT CURRENT

CONDITIONER

PLUG VALVE

QUANTITY

ROOF DRAIN

RETURN FAN

REHEAT COIL

RELIEF

ROOM

SCH SCHEDULE

REQD REQUIRED

MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

Interior Design

Project Management

970-242-1058 office

BLYTHE GROUP + co.

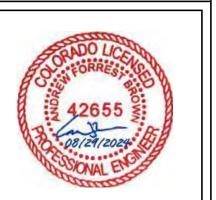
Grand Junction, CO 81501

622 Rood Avenue

125 N SPRUCE ST **GRAND JUNCTION, CO 81501**

ELECTRICAL COVER SHEET

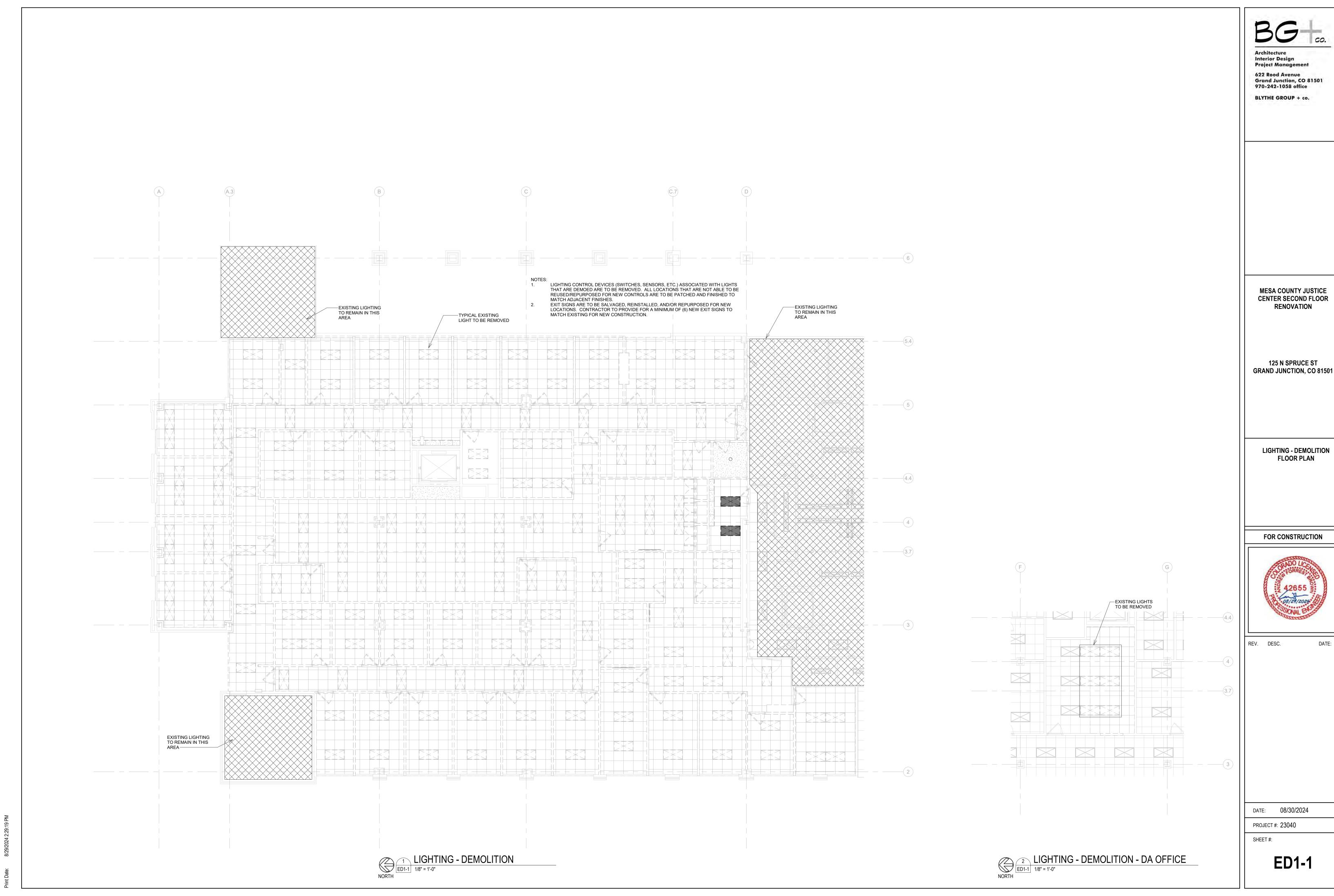
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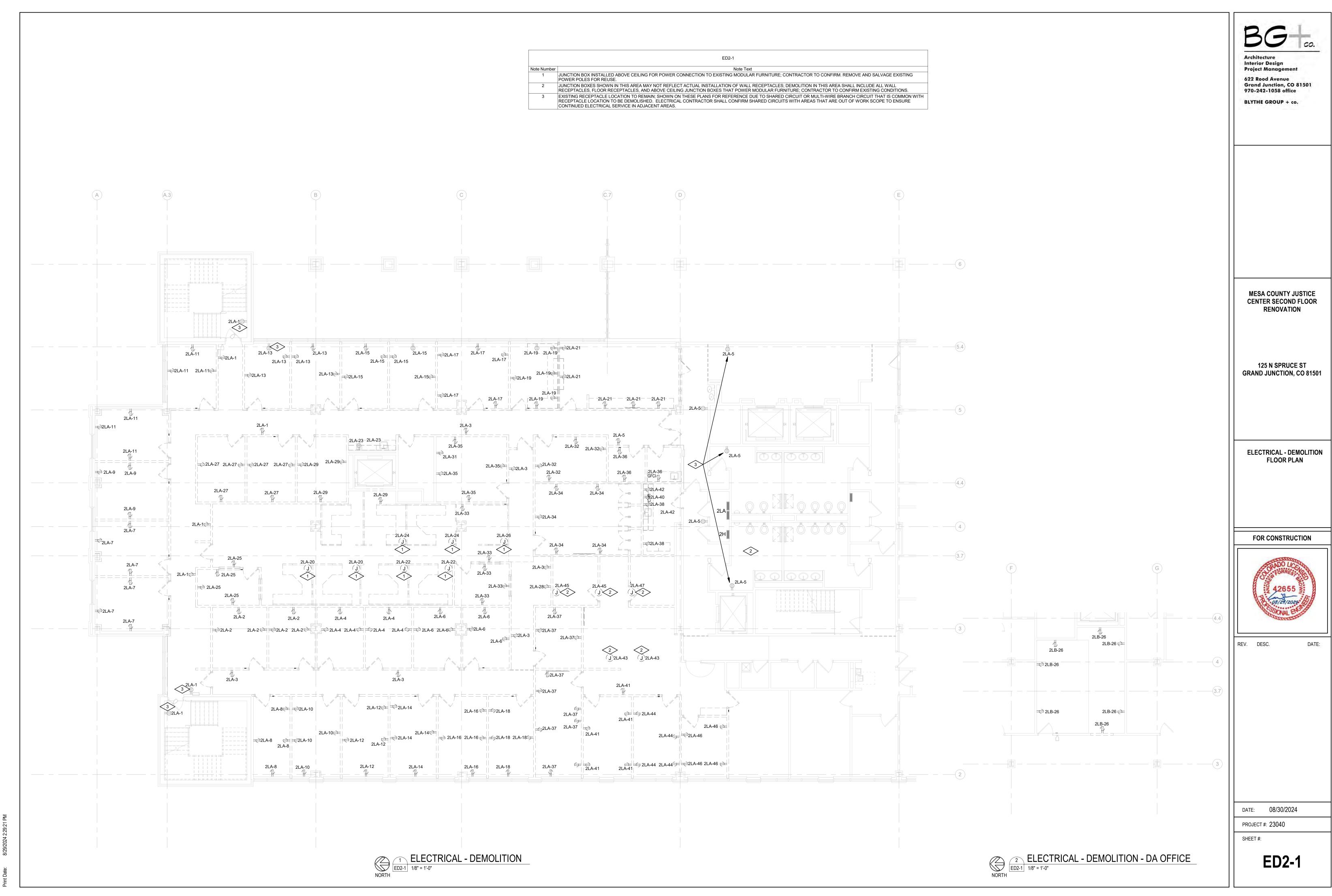
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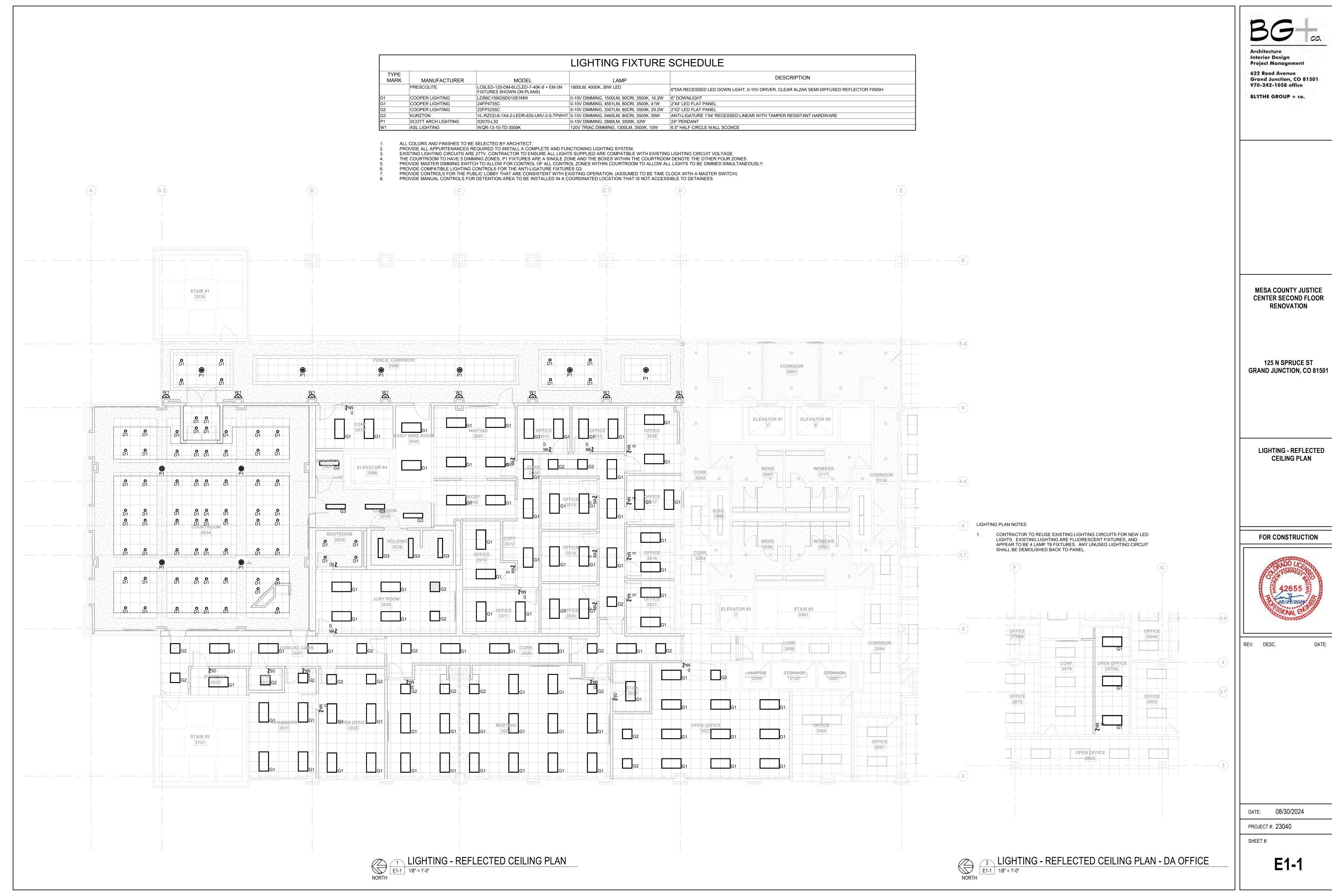
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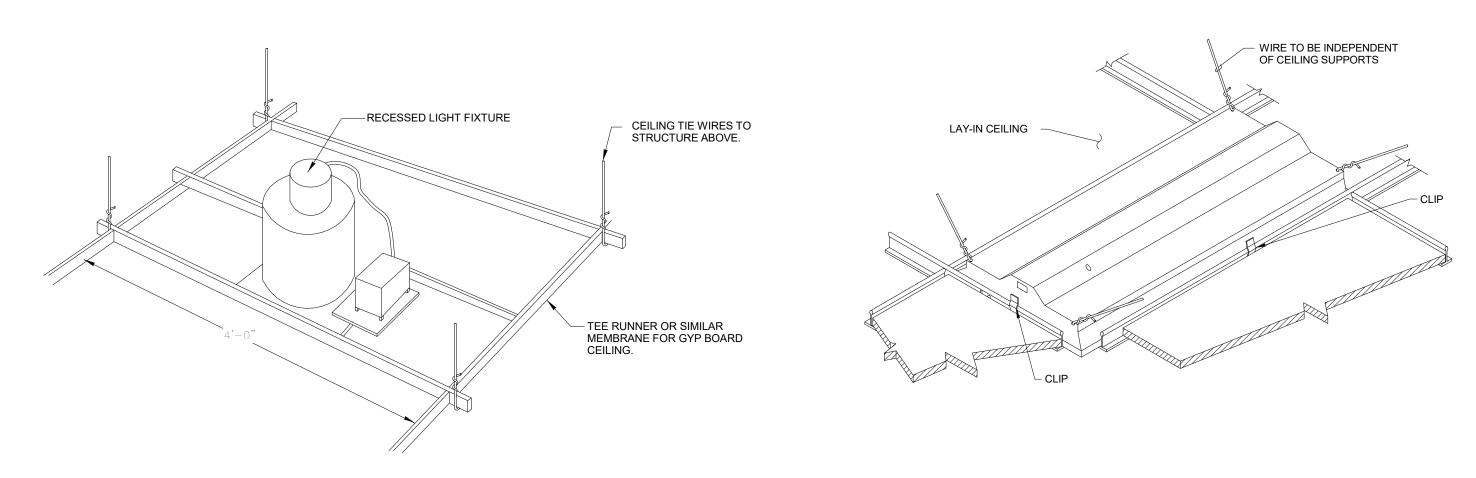




Project Team:



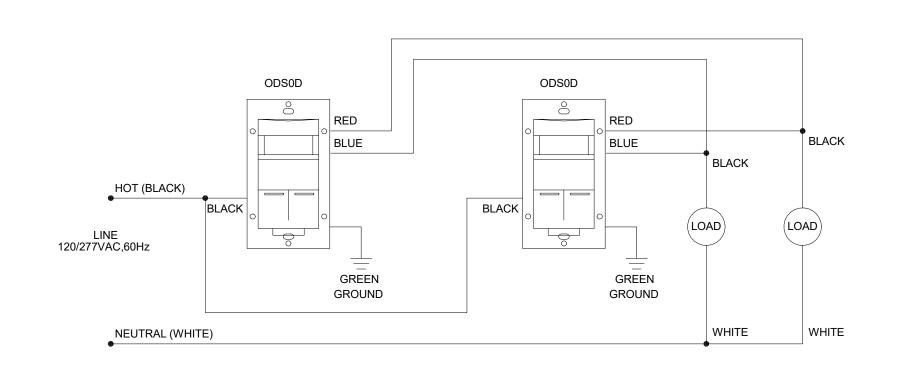


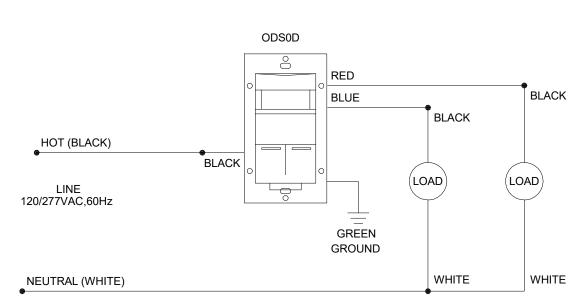


RECESSED LIGHT FIXTURE DETAIL

SCALE: NOT TO SCALE

- NOTE:
 1. ALL GRID MOUNTED FIXTURES ARE TO BE SUPPORTED FROM THE STRUCTURE ABOVE.
 2. 200lb TEST WIRE HANGER AT EACH CORNER OF FIXTURE (TOTAL OF 4) OR 1 CADDY CLIP 515 PER SIDE
- (101AL OF 4)
 3. TYPICAL ALL GRID MOUNTED FIXTURES.





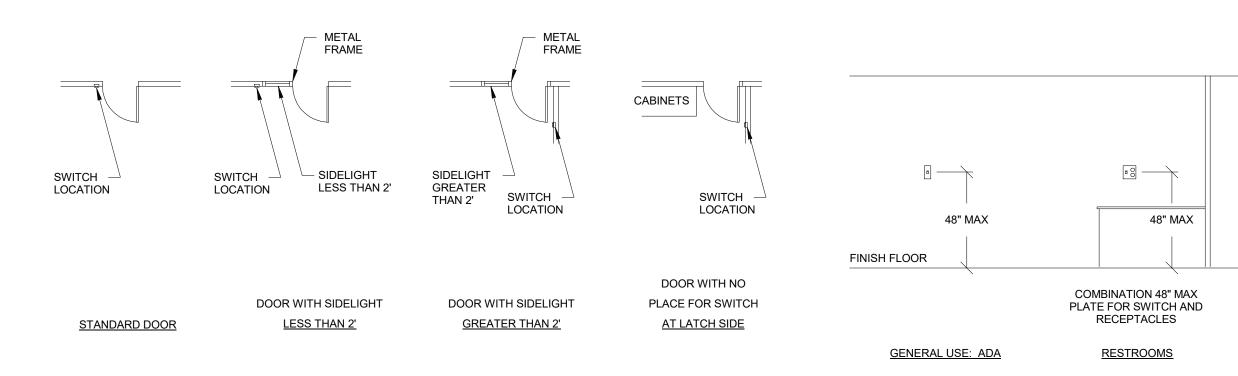
BI-LEVEL SWITCHING DETAIL

NOT TO SCALE

- DETAIL NOTES:

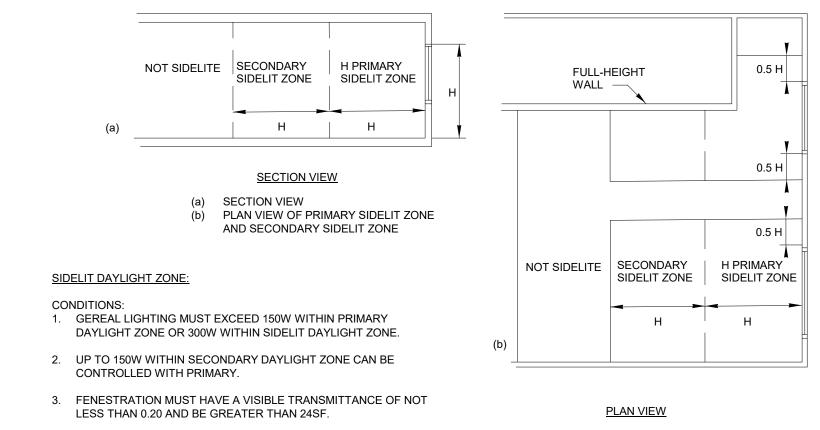
 1. PROVIDE SWITCHERS THAT ARE COMPATIBLE WITH THE LIGHT FIXTURES THAT ARE BEING INSTALLED.

 2. PROVIDE DUAL CONTROL IN THE CORRIDORS AND ALL ROOMS WITH MORE THAN ONE DOOR.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EXACT LOCATION OF THE SWITCHES WITH THE ARCHITECTURAL DETAILS OF THE SPACE.



SWITCH MOUNTING DETAILS

SCALE: NOT TO SCALE

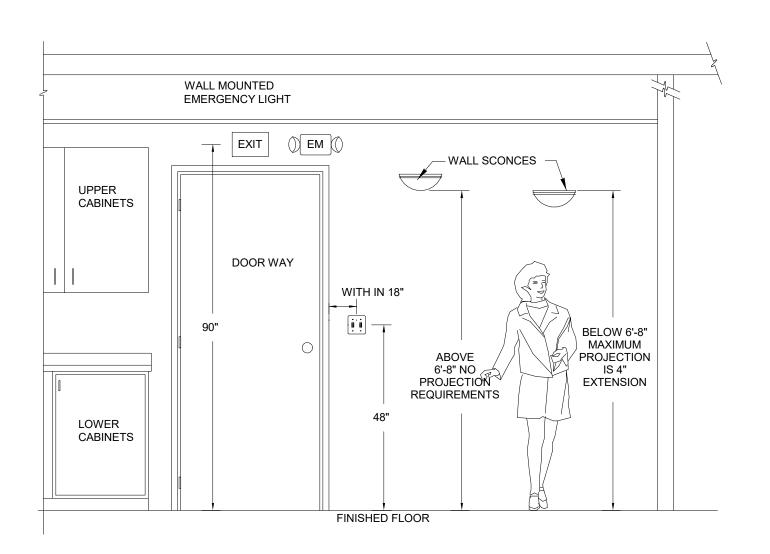


DAYLIGHT HARVESTING ZONES

FOR REFERENCE

CONSIDERED.

4. ADJACENT BUIDING AND GEOLOGICAL FORMATIONS SHOULD BE



LIGHTING DEVICE MOUNTING HEIGHT DETAIL

NOT TO SCALE

DETAIL NOTES:

48" MAX

<u>LIGHTING</u> CONTROL STATION

- 1. ALL DEVICES SHOWN ON THIS DETAIL ARE FOR REFERENCES OF MOUNTING HEIGHTS ONLY. THE ELECTRICAL CONTRACTOR SHALL FIELD ADJUST THE HEIGHTS AND LOCATIONS OF THE DEVICES AS REQUIRED FOR PROPER MOUNTING.
- 2. ALL DEVICES REQUIRED FOR THIS PROJECT MAY NOT APPEAR ON THIS DETAIL. ALL ITEMS SHOWN ON THIS DETAIL MAY
- NOT BE REQUIRED FOR THIS PROJECT.

 3. THE AMERICANS WITH DISABILITIES ACT, KNOWN AS ADA, AFFECTS LIGHT FIXTURES USED IN CIRCULATION OR EGRESS SPACES. IN PRACTICE THIS MEANS THAT WALL MOUNTED FIXTURES LOCATED BELOW 6'-8" AFF IN HALLS, CORRIDORS, PASSAGEWAYS OR AISLES, MUST BE NO GREATER THAN 4" DEEP. THE ADA AFFECTS CONSTRUCTION FOR BOTH NEW AND EXISTING BUILDINGS.

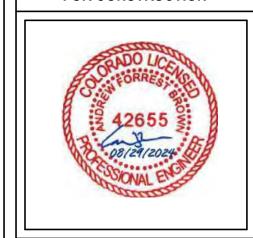
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LIGHTING DETAILS

FOR CONSTRUCTION



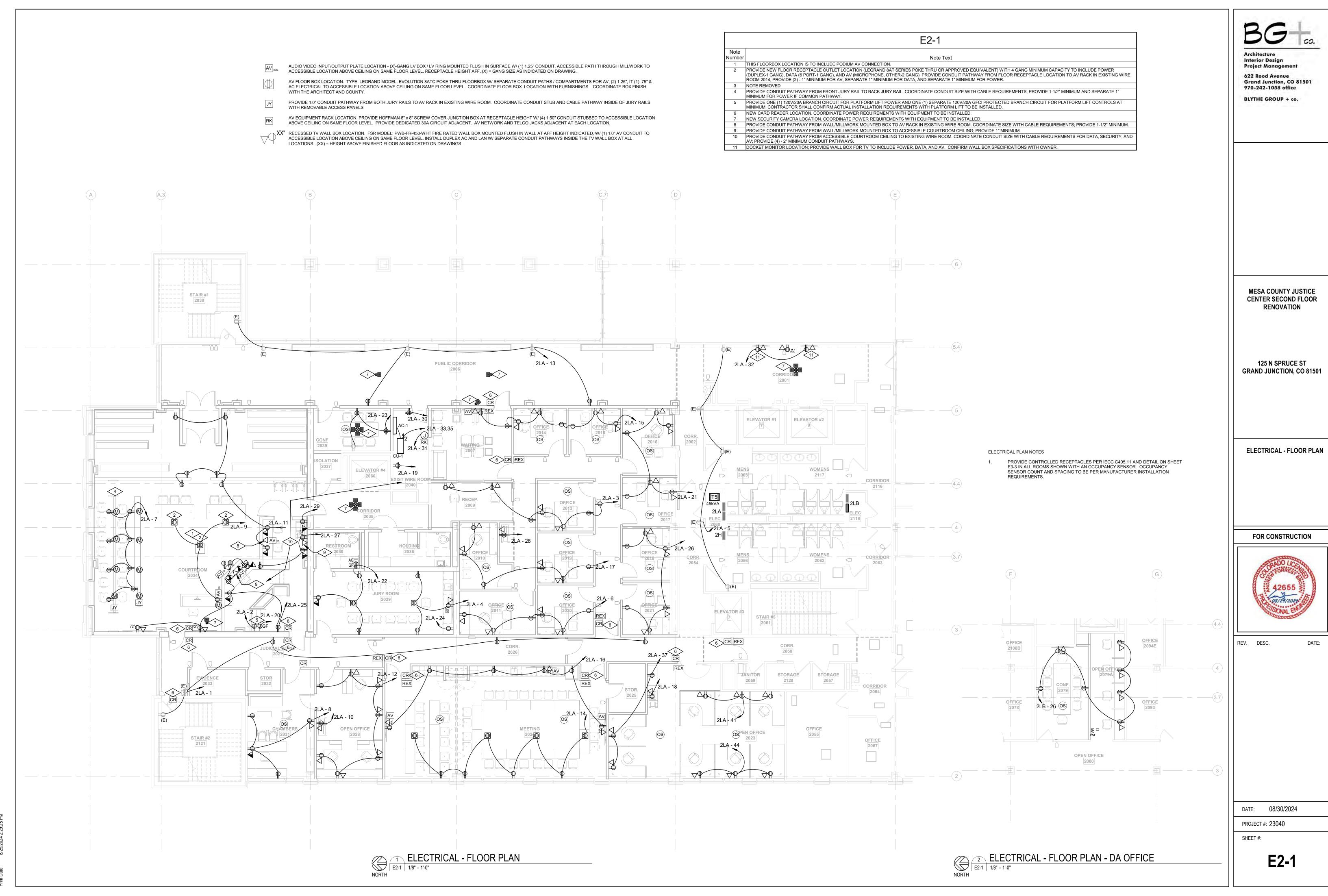
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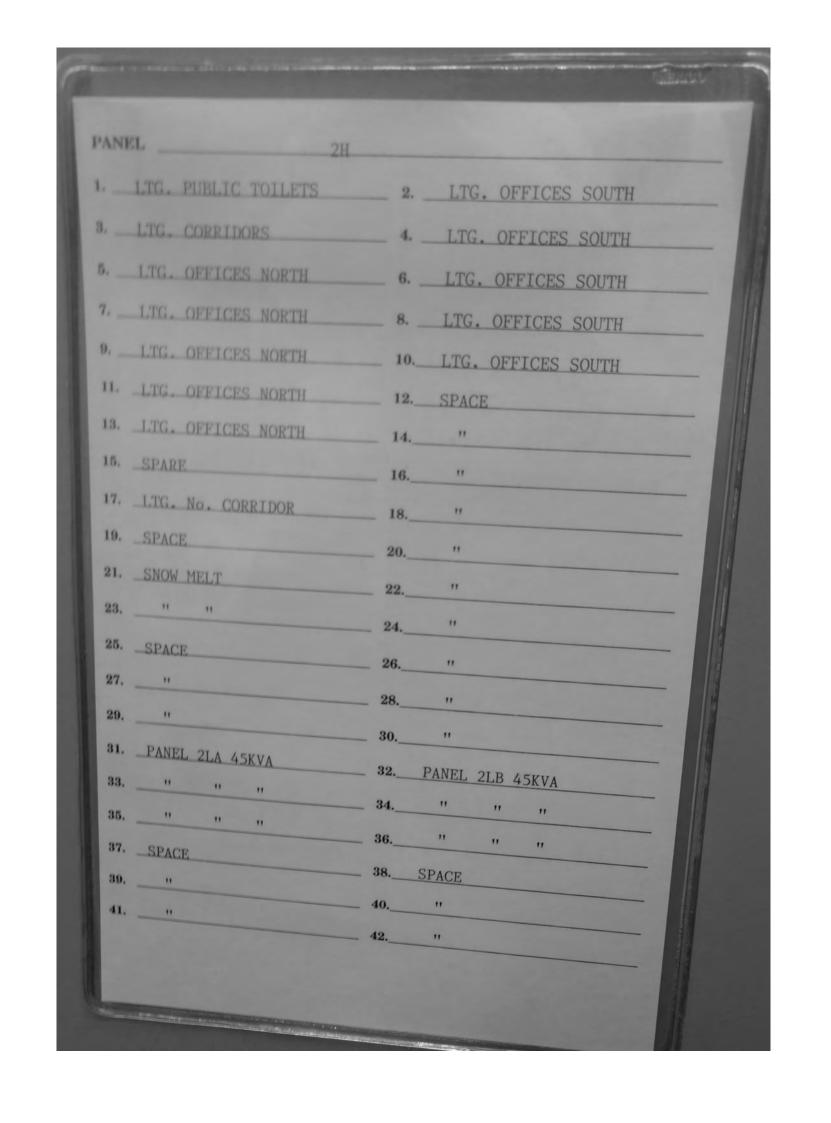
PROJECT #: 23040

E1-2





Ві	ranch Panel: 2H			Volts: 4	80/277	Wye			A.I.C. Rating:		
	Supply From: Mounting: Surface Enclosure: Type 1			Phases: 3 Wires: 4		vvye			Mains Type: Mains Rating: 250 A MCB Rating: 225 A		
lotes:											
СКТ	Circuit Description	Trip Poles	A	В		С	Poles	Trip	Circuit De	escription	СКТ
1	Official Description	mp roles					1 0103	IIIP	Oil call Di	SSCIPTION	2
3											4
5											6
7											8
9											10
11											12
13											14
15											16
17							_				18
19											20
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23 25											24 26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
		Total Load:	0 VA	0 VA		0 VA					
egend:		Total Amps:	0 A	0 A		0 A					
oad Classifica	ation	Connected Loa	d I	Demand Fact	or	Estimated [Demand		Panel	Totals	
									Total Conn. Load:	0 VA	
									Total Est. Demand:	0 VA	
-						-			Total Conn.:		
									Total Est. Demand:	0 A	
lotes:											



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125 N SPRUCE ST GRAND JUNCTION, CO 81501

ELECTRICAL SCHEDULES

FOR CONSTRUCTION

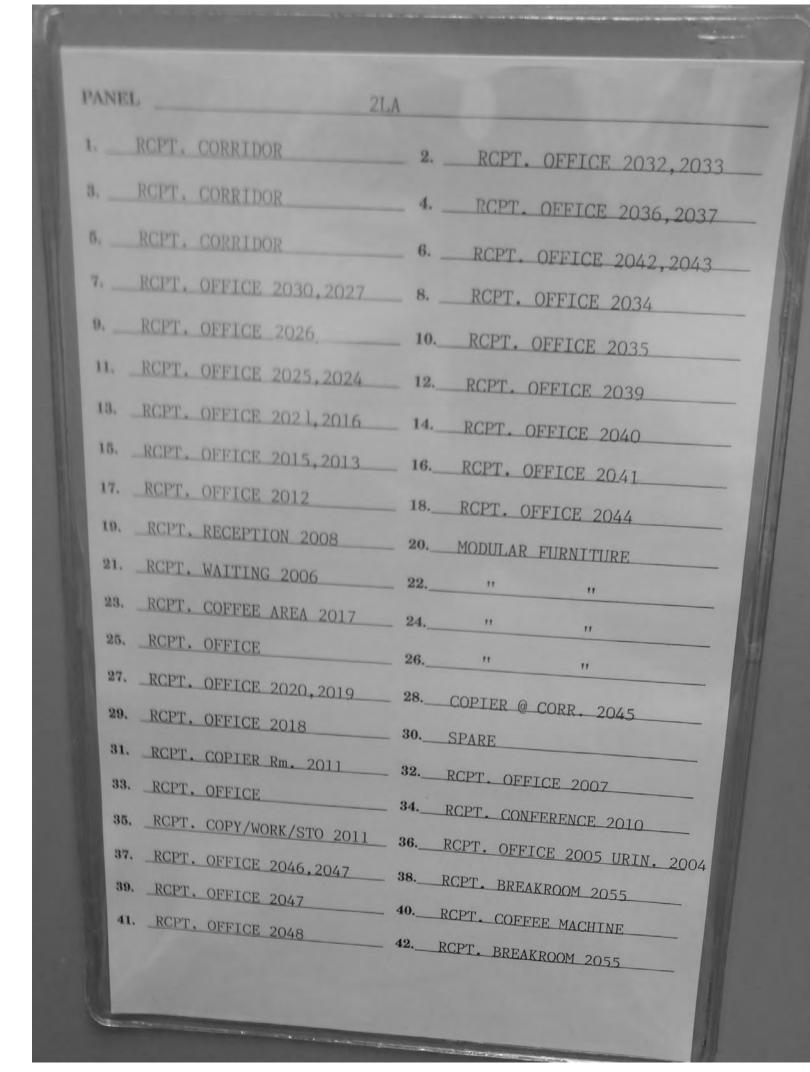


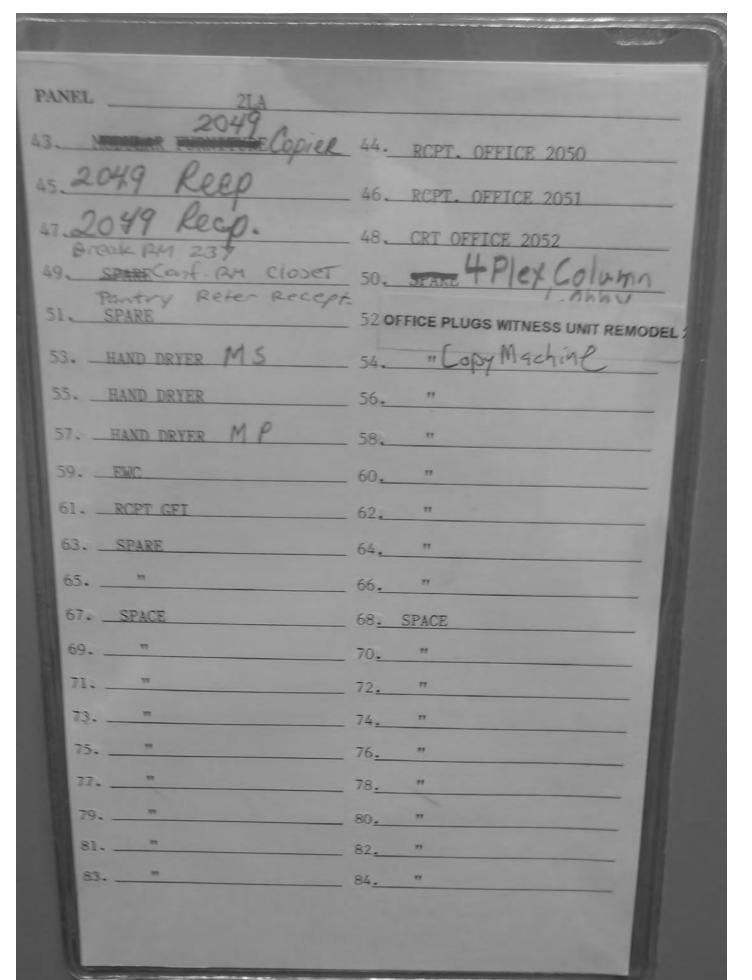
EV DESC

DATE: 08/30/2024

PROJECT #: 23040

	Location: Supply From: Mounting: Surface Enclosure: Type 1				I	Volts: Phases: Wires:		s Wye				A.I.C. Rating: Mains Type: Mains Rating: 250 A MCB Rating: 150 A		
lotes:														
CKT	Circuit Description	Trip	Poles		A	E	3	c	,	Poles	Trip		escription	СК
3	Receptacle Stair/Corridor Receptacle, Corridor/ Office	20 A 20 A	1	900 VA	1920	1260	720 VA			1	20 A 20 A	Platform Lift Power Receptacle, Jury Room		2
5	Receptacle Corridor	20 A	1			1200	720 VA	900 VA	1080	1	20 A	Receptacle Receptacle		6
7	Receptacle, Coutroom Jury box	20 A	1	1440	720 VA					1	20 A	Receptacle RM 2031		8
9	Receptacle	20 A	1			720 VA	1000			1	20 A	Printer		10
11	Receptacle	20 A	1					1440	1260	1	20 A	Receptacle RM 2028		12
13	Receptacle	20 A	1	1080	1440					1	20 A	Receptacle		14
15	Receptacle	20 A	1			1440	1080			1	20 A	Receptacle		16
17	Receptacle	20 A	1					1080	1000	1	20 A	Receptacle, Printer		18
19	Receptacle	20 A	1	360 VA	500 VA					1		Platform Lift Controls	=-	20
21	Receptacle	20 A	1			1080	900 VA	700 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	500 \ (1)	1	20 A	Receptacle, Corridor, Ho	lding, RR	22
23	Receptacle Receptacle Receptacle Receptacle Receptacle Receptacle	20 A	1	1440	1000			720 VA	500 VA		20 A	Receptacle, UC Fridge		24
25 27	Receptacle, TV's Judge Bench Receptacle	20 A 20 A	1	1440	1080	540 VA	1000			1	20 A 20 A	Receptacle Receptacle		26
	Printer	20 A 20 A	1			540 VA	1000	1000	360 VA		20 A	Receptacle		30
	AV EQUIPMENT RACK	30 A	1	2500	360 VA			1000	550 VA	1		Receptacle		32
33	WIRE ROOM SPLIT SYSTEM	30 A	2	2000	300 VA	5200				'	207	receptacie		34
35						0200		0 VA						36
37	Receptacle	20 A	1	540 VA										38
39	,													40
41	Receptacle	20 A	1					540 VA						42
43					540 VA					1	20 A	Receptacle		44
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71	1													72
73														74
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79														80
81														82
83														84
			al Load:		20 VA .83 A		0 VA 83 A	9880 82.3						
_egend	:	lota	I Amps:	129	.63 A	130.	03 A	62.3	3 A					
Load C	assification		nected I 5200 VA			nand Fa			ated De			Panel	Totals	
Power			2500 VA			100.00%			2500 VA			Total Conn. Load:	39640 VA	
Recepta	ncle		31940 V			65.65%			20970 VA			Total Est. Demand:	28670 VA	
				_			_	53.5				Total Conn.:		
												Total Est. Demand:	79.58 A	
lotes:													1	





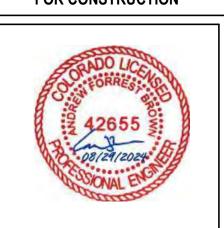


MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

125 N SPRUCE ST GRAND JUNCTION, CO 81501

ELECTRICAL SCHEDULES

FOR CONSTRUCTION

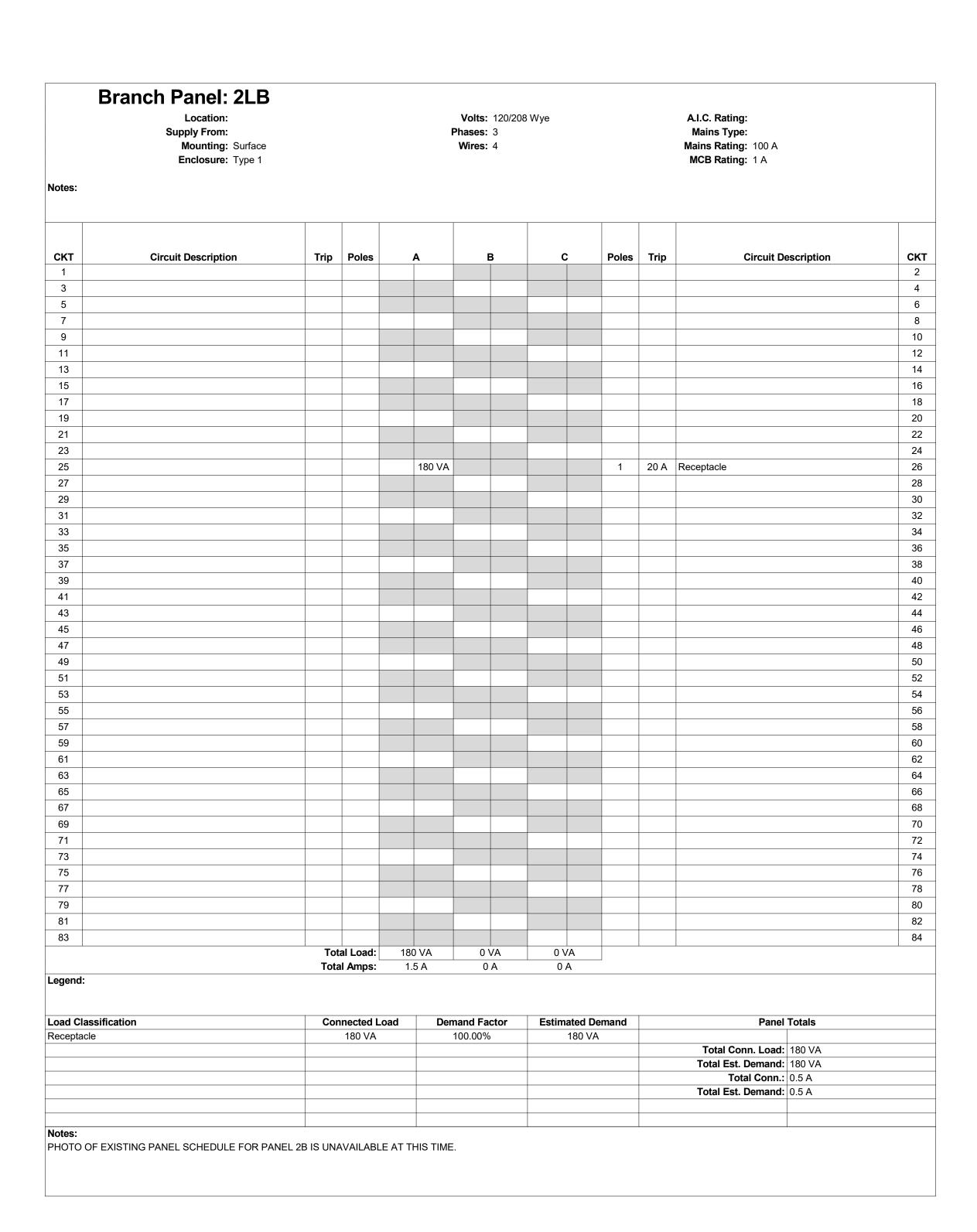


REV. DESC. [

DATE: 08/30/2024

PROJECT #: 23040

OUEET #



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ELECTRICAL SCHEDULES

FOR CONSTRUCTION

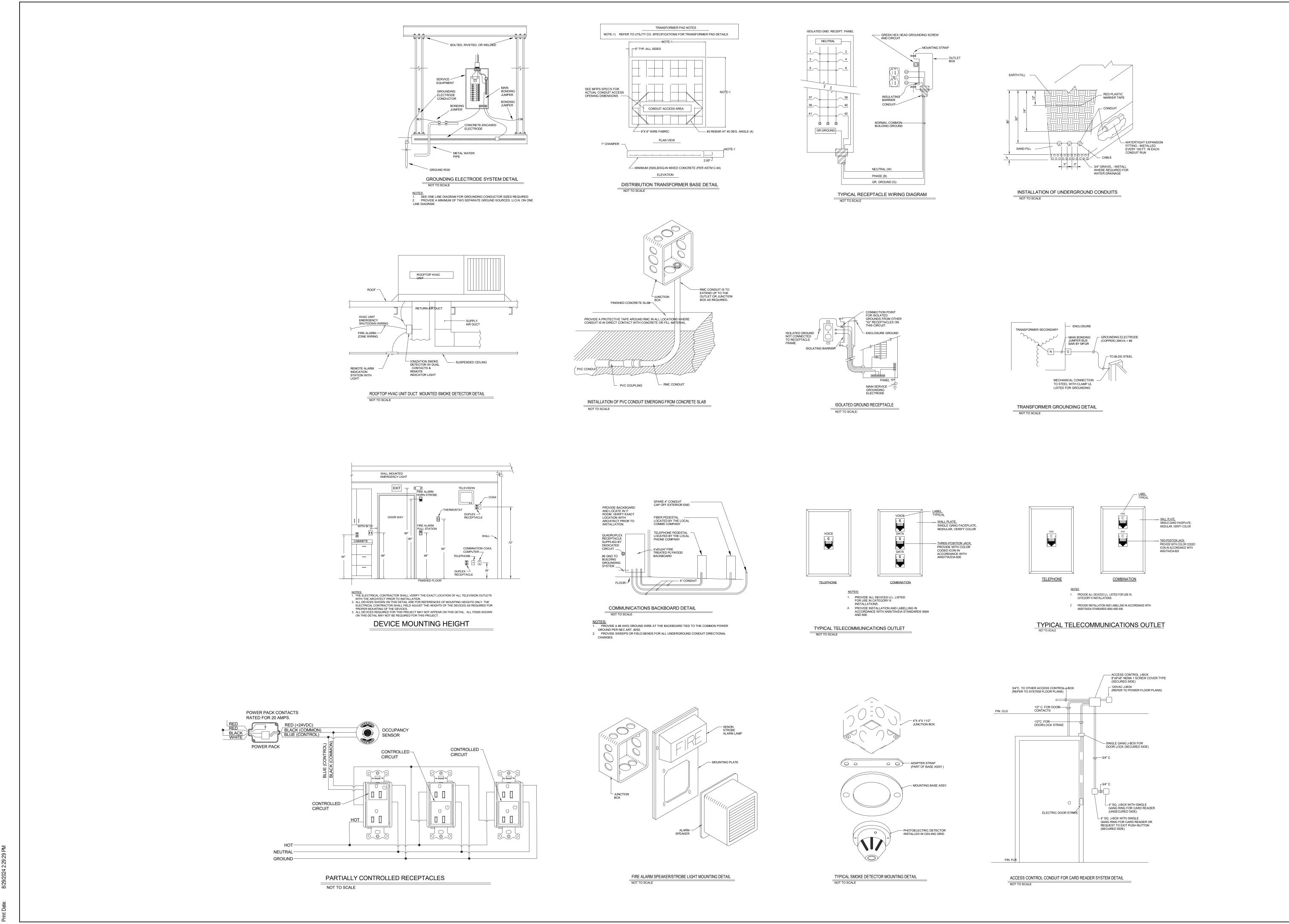


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PROJECT #: 23040

RFP 2427-KY



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ELECTRICAL DETAILS

FOR CONSTRUCTION



REV. DESC. DATE:

DATE: 08/30/2024

SHEET #:

PROJECT #: 23040

ABBREVIATIONS ACCESS CONTROL SYSTEM ABOVE FINISHED FLOOR BALANCED MAGNETIC SWITCH CLOSED CIRCUIT TELEVISION CENTERLINE CPU CENTRAL PROCESSING UNIT CARD READER DETENTION EQUIPMENT CONTRACTOR DOOR POSITION SWITCH DWG DRAWING **ELECTRICAL CONTRACTOR ENGINEER** EQPT **EQUIPMEN ELECTRIC STRIKE** EXST EXISTING EXT EXTERIOR FIBER OPTICS FTR FUTURE **GENERAL CONTRACTOR** GRAPHICAL USER INTERFACE HIGH DEFINITION (1080p) CAMERA HUMAN MACHINE INTERFACE INSIDE DIAMETER INTERMEDIATE DISTRIBUTION FRAME INTRUSION DETECTION SYSTEM **INERNET PROTOCAL** INFRARED JUNCTION BOX LIGHTGUIDE INTERCONNECT UNIT LOCK POWER SUPPLY MAXIMUM MAIN DISTRIBUTION FRAME **MINIMUM** MISCELLANEOUS NOT TO SCALE OUTSIDE DIAMETER OVERHEAD DOOR MONITOR OWNER PROVIDED / CONTRACTOR INSTALLED OP/CI OP/OI OWNER PROVIDED / OWNER INSTALLED **PULL BOX** POWER DISTRIBUTION UNIT PERSONAL IDENTIFICATION NUMBER PASSIVE INFRARED PROGRAMMABLE LOGIC CONTROLLER PUSH TO TALK PAN, TILT, ZOOM PWR POWER QUANTITY REFERENCE REQUIRED REQUEST TO EXIT DEVICE RECEIVER SECURITY ELECTRONICS CONTRACTOR SECURITY MANAGEMENT SYSTEM SALLYPORT SQUARE STAINLESS STEEL TOUCHSCREEN CONTROL STATION TRANSIENT VOLTAGE SURGE SUPPRESSION TVSS TRANSMITTER TRANSCEIVER TYP TYPICAL

UNINTERRUPTIBLE POWER SUPPLY

GENERAL NOTES

- SECURITY ELECTRONICS CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR, DETENTION EQUIPMENT CONTRACTOR, ELECTRICAL CONTRACTOR, AND OWNER FOR INSTALLATION OF SECURITY SYSTEMS. PROVIDE COORDINATION WITH OTHER CONTRACTORS AS REQUIRED.
- . DIVISION 28 CONTRACTOR TO PROVIDE AND INSTALL ALL WIRING, CABLING, ETC. FOR A COMPLETE AND OPERATING SYSTEM, WIRE CALL OUTS ARE A GUIDE. CONTRACTOR IS RESPONSIBLE FOR FINAL SELECTION OF ALL WIRE AND CONDUIT SIZES AND QUANTITIES.
- 3. DIVISION 28 CONTRACTOR TO MAKE FINAL CONNECTIONS TO ALL SECURITY DEVICES.
- THE CONTRACTOR SHALL INCLUDE ANY COORDINATION, RELAYS, TIMERS, NETWORK CARDS, TERMINAL STRIPS, ETC. REQUIRED FOR A COMPLETELY FUNCTIONAL INTERFACE WITH ELEVATOR CONTROLLERS, FIRE ALARM SYSTEMS, DOOR HARDWARE AND AUTOMATIC DOOR OPERATORS, AS IS APPLICABLE.
- COORDINATE ALL TELEPHONE AND DATA (LAN/WAN) INSTALLATION AND CONNECTION REQUIREMENTS WITH THE OWNER'S IT DEPARTMENT REPRESENTATIVE AND THE GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- ALL ELECTRICAL POWER SUPPLIED TO SECURITY EQUIPMENT OR DEVICES SHALL BE ON AN EMERGENCY SYSTEM INCLUDING UPS. ALL CONDUCTORS AND CIRCUIT BREAKERS SHALL BE SIZED IN ACCORDANCE WITH THEIR CONNECTED LOADS (20 AMP MINIMUM). ALL CIRCUITS SHALL BE DEDICATED. A GROUND CONDUCTOR SHALL ALWAYS BE INSTALLED IN ANY POWER WIRING. ALL SECURITY EQUIPMENT UTILIZING ELECTRICAL POWER SHALL ALSO BE ADEQUATELY GROUNDED. REVIEW EXISTING LOCK POWER REQUIREMENTS AND MAINTAIN ON GENERATOR POWER.
- POWER TO UPS AND UPS TO BE PROVIDED BY DIVISION 26 CONTRACTOR. FROM THE UPS, DIVISION 26 CONTRACTOR TO PROVIDE BREAKER PANELS, TVSS EQUIPMENT AND BRANCH CIRCUIT WIRING. SECURITY ELECTRONICS CONTRACTOR TO PROVIDE EQUIPMENT LOADS TO DIVISION 26 CONTRACTOR FOR COORDINATION.
- 8. SECURITY ELECTRONICS CONTRACTOR TO PROVIDE CONNECTION OF UPS POWER TO ALL SECURITY EQUIPMENT, MONITORS, CPU'S, ACCESS CONTROL EQUIPMENT, VIDEO SURVEILLANCE EQUIPMENT, INTERCOM EQUIPMENT, POWER SUPPLIES, NVR'S, ETC.
- ELECTRICAL CIRCUITS SHOWN IN THIS SET ARE FOR REFERENCE ONLY AND PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE ELECTRICAL SHEETS FOR CIRCUIT NUMBERS, CIRCUITING AND PANEL LOCATIONS.
- 10. ALL PANELS ARE TO BE CLEARLY MARKED WITH LOCATION, PANEL NAME, AND CIRCUITS OF SOURCE POWER ENTERING INTO PANEL
- 1. PER 409.110 MARKING. AN INDUSTRIAL CONTROL PANEL SHALL BE MARKED WITH THE FOLLOWING INFORMATION THAT IS PLAINLY VISIBLE AFTER INSTALLATION: (4) SHORT-CIRCUIT CURRENT RATING OF THE INDUSTRIAL CONTROL PANEL BASED ON ONE OF THE FOLLOWING: A. SHORT-CIRCUIT CURRENT RATING OF A LISTED AND LABELED ASSEMBLY; B. SHORT-CIRCUIT CURRENT RATING ESTABLISHED UTILIZING AN APPROVED METHOD. INFORMATIONAL NOTE: ANSI/UL 508A, STANDARD FOR INDUSTRIAL CONTROL PANELS, SUPPLEMENT SB. IS AN EXAMPLE OF AN APPROVED METHOD. EXCEPTION TO (4): SHORT-CIRCUIT CURRENT RATING MARKINGS ARE NOT REQUIRED FOR INDUSTRIAL CONTROL PANELS CONTAINING ONLY CONTROL CIRCUIT COMPONENTS.
- 12. PER 409.22 SHORT-CIRCUIT CURRENT RATING. (A) INSTALLATION. AN INDUSTRIAL CONTROL PANEL SHALL NOT BE INSTALLED WHERE THE AVAILABLE FAULT CURRENT EXCEEDS ITS SHORT-CIRCUIT CURRENT RATING AS MARKED IN ACCORDANCE WITH 409.110(4). (B)
 DOCUMENTATION. IF AN INDUSTRIAL CONTROL PANEL IS REQUIRED TO BE MARKED WITH A SHORT-CIRCUIT CURRENT RATING IN ACCORDANCE WITH 409.110(4), THE AVAILABLE FAULT CURRENT AT THE INDUSTRIAL CONTROL PANEL AND THE DATE THE AVAILABLE
 FAULT CURRENT CALCULATION WAS PERFORMED SHALL BE DOCUMENTED AND MADE AVAILABLE TO THOSE AUTHORIZED TO INSPECT. INSTALL, OR MAINTAIN THE INSTALLATION.
- 13. ALL ELECTRICAL REQUIREMENTS ARE A GUIDE. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENTS REQUIRED TO CONFORM TO MANUFACTURER REQUIREMENTS AND CODE COMPLIANCE.
- 14. COORDINATE WITH OWNER'S REPRESENTATIVE FOR DEMOLISHED MATERIAL TO BE TURNED OVER OR REMOVED.
- 15. WIRING TYPES AND QUANTITIES INDICATED ARE FOR REFERENCE ONLY. COORDINATE WIRING WITH EQUIPMENT MANUFACTURER(S) AND ALL APPLICABLE CODES. PROVIDE CORRECT CABLING AS REQUIRED. ALL DISTRIBUTION CONDUITS TO BE OVERSIZED TO ACCOMMODATE FUTURE ADDITIONS AND INTERNAL EXPANSION OF SYSTEM. PROVIDE PULL STRING WITH WIRE IN ALL CONDUIT.
- 16. WIRE GAUGE TO BE SIZED TO ACCOMMODATE LENGTH OF RUN AND POWER DRAW SO VOLTAGE DROP IN THE CONDUCTOR DOES NOT EXCEED 3%.
- 17. ALL WIRING, INCLUDING SHIELDS, MUST BE FREE OF SHORTS, GROUNDS AND STRAY VOLTAGES.
- 18. ALL CONTROL WIRING SYSTEMS SHALL USE STRANDED COPPER CONDUCTORS UNLESS DIRECTED SPECIFICALLY BY MANUFACTURER REQUIREMENTS.
- 19. AT EXISTING FIELD DEVICE WIRING TO REMAIN, UTILIZE TERMINATION STRIPS TO EXTEND WIRING WHERE NECESSARY TO LAND WIRING ONTO NEW HEADEND EQUIPMENT.
- 20. ALL WIRES SHALL BE COLOR CODED AND SHALL BE CONNECTED IN A UNIFORM MANNER. TRANSPOSING OR CHANGING OF COLOR CODES OR WIRE GUAGES SHALL NOT BE PERMITTED. WIRE AND CABLE SIZES, NUMBER OF CONDUCTORS, SHIELDING OR OTHER ITEMS LISTED ON THESE DRAWINGS ARE A GUIDE TO THE CORRECT PRODUCT REQUIRED TO ACHIEVE A WORKING SYSTEM AND REPRESENT THE MINIMUM ACCEPTABLE STANDARDS. CONTRACTOR SHALL CONSULT MANUFACTURER'S RECOMMENDATION FOR CABLING AND USE WHICHEVER IS GREATER IN QUALITY, QUANTITY, GAUGE, SHIELDING AND NUMBER OF CONDUCTORS.
- 21. A PRE-PRINTED VINYL MATERIAL LABEL WRAPPED IN CLEAR SHRINK WRAP SHALL BE PROVIDED TO THE FOLLOWING: A.) CABLES WITHIN 6" UPON ENTRY AT ANY SECURITY PANEL, TERMINATION OR SPLICE BOX; B.) ALL WIRE LEADS WITHIN 2" FROM ANY TERMINAL BLOCK; C.) THE CONTRACTOR SHALL SUBMIT SAMPLES OF MARKERS AND ANY NUMBERING OR MARKING SYSTEM FOR REVIEW PRIOR TO IMPLEMENTATION.
- 22. ALL ROUTING OF WIRING AND ANY RELATED CONDUIT IS DIAGRAMMATIC. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING PRIOR TO INSTALLATION.
- 23. ALL CABLE SHALL BE IN CONDUITS. UNDERGROUND CABLE SHALL BE RATED FOR WET APPLICATIONS. ALL EXTERIOR CABLE SHALL BE IN GALVANIZED CONDUIT. RE-GALVANIZE WELDS AND SCRATCHED OR DAMAGED CONDUIT AFTER INSTALLATION.
- 24. SECURITY ELECTRONICS SYSTEM MINIMUM CONDUIT SIZE (3/4") <40% FILL TO ALL INDIVIDUAL LOCKS, DEVICES, CAMERAS, INTERCOMS, SPEAKERS, ETC. ALL CONDUITS HOMERUN TO SECURITY EQUIPMENT ROOMS. PROVIDE EACH SYSTEM WITH SEPARATE RACEWAY
- 25. PROVIDE SEPARATE RACEWAY SYSTEM FOR 120V POWER AND CONTROL/VIDEO WIRING FOR EXTERIOR CAMERAS.
- 26. ALL CONDUITS AND CABLE PATHS SHALL RUN PARALLEL WITH OR AT RIGHT ANGLES TO THE WALLS, IF MORE THAN THREE 90-DEGREE BENDS ARE TO BE USED IN THE CONDUIT RUN, INSERT A PULL BOX. CONTRACTOR SHALL SIZE THE BOX ACCORDINGLY. CONDUITS SHALL BE SIZED AS INDICATED ON THE DRAWINGS OR LARGER AS REQUIRED TO COMPLY WITH CODE.
- 27. THE CONTRACTOR SHALL PROPERLY SEAL ALL CONDUIT OR SLEEVE PENETRATIONS THROUGH ALL WALLS, FLOORS AND CEILINGS USING APPROVED FIRE STOPPING MATERIALS AND SEALANTS BASED ON RATING AND AS PER APPLICABLE BUILDING CODES.
- 28. PROVIDE PULL STRINGS IN ALL CONDUITS. PROVIDE BLANK COVERS ON ALL JUNCTION AND PULL BOXES.
- 29. SURFACE MOUNTED CONDUIT IS NOT ACCEPTABLE. EVERY EFFORT SHOULD BE MADE BY THE CONTRACTOR TO CONCEAL CONDUIT. CONDITIONS WHERE CONDUIT CANNOT BE CONCEALED SHALL BE REVIEWED AND APPROVED BY OWNER'S REPRESENTATIVE ON A CASE-BY-CASE BASIS. EXPOSED CONDUIT IS NOT ACCEPTABLE IN ANY AREAS OF NEW CONSTRUCTION.
- 30. ALL ABANDONED WIRING TO BE REMOVED AND PROPERLY DISPOSED OF, PROVIDE PULL STRINGS IN ALL ABANDONED CONDUIT TO REMAIN, WITH LABELS ON EACH END.
- 31. AT LOCATIONS OF ABANDONED CONDUIT TO REMAIN AND THAT DO NOT TERMINATE AT A BACKBOX, PROVIDE A BACKBOX AND COVER PLATE. PROVIDE SECURITY SCREWS AT ALL INMATE ACCESSIBLE LOCATIONS.
- 32. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES. THE CONTRACTOR SHALL NOT INTERMIX ANY LINE VOLTAGE POWER WIRES (120VAC) WITH ANY LOW VOLTAGE SIGNAL OR CONTROL WIRES IN ANY CONDUIT OR RACEWAY.
- 33. AT EACH EQUIPMENT CABINET PROVIDE A SEPARATE SYSTEM & POWER GROUNDING BUS. PROVIDE DEDICATED CONDUCTOR TO NEAREST ISOLATED GROUND SOURCE, GROUND PER EIA/TIA 607. REVIEW EXISTING GROUNDING BAR FOR COMPLIANCE, IF FOUND TO BE LACKING THEN PROVIDE NEW AS REQUIRED.
- 4. PROVIDE TVSS AT ALL EXTERIOR VIDEO, CONTROL, INTERCOM, POWER, AND COPPER CONDUCTORS.
- 35. SECURITY ELECTRONICS DEVICES WITHIN THE ELEVATOR CAB ARE SHOWN ON THE FIRST FLOOR PLAN ONLY.
- REFER TO PLAN DRAWINGS FOR LOCATION OF CAMERAS. REVIEW ALL CAMERA LOCATIONS WITH OWNER PRIOR TO FINAL INSTALLATION. REVIEW ALL CAMERA VIEWS WITH OWNER AFTER INSTALLATION FOR FINAL ADJUSTMENTS. CAMERA VIEW SHEETS WILL BE PROVIDED TO THE CONTRACTOR AFTER AWARD OF CONTRACT. CAMERA VIEW SHEETS TO BE PROVIDED ONLY AS A REPRESENTATION OF WHAT IS EXPECTED TO BE SEEN FROM INSTALLED CAMERAS AND ARE INTENDED TO BE USED AS A TOOL BY THE CONTRACTOR WHEN INSTALLING AND ADJUSTING CAMERAS.
- 7. CAMERAS SHOWN IN THE CORNER OF A ROOM OR SPACE ARE TO BE MOUNTED TIGHT IN THE CORNER TO MAINTAIN THE DESIRED CAMERA VIEW AREA.
- 38. THE CONTRACTOR SHALL ALWAYS MAINTAIN, AT THE JOB SITE, UPDATED "RECORD" DRAWINGS. THESE DRAWINGS SHALL BE AVAILABLE TO THE ARCHITECTS, INSPECTORS OR THE OWNER UPON REQUEST.
- 39. THE CONTRACTOR SHALL CLEAN AND THOROUGHLY CHECK ALL INSTALLED WORK PRIOR TO CONCEALING OF ARCHITECTURAL FINISHES. CLEAN ALL EXPOSED SURFACES AND NEW EQUIPMENT AFTER COMPLETION. THE CONTRACTOR SHALL ALSO REPAIR OR CLEAN ALL SOILED SURFACES, PAINTED SURFACES OR DAMAGED ARCHITECTURAL FINISHES TO MATCH THE ADJACENT AREA. WHERE REQUIRED, CLEANING, PATCHING OR PAINTING TO BRING THE AFFECTED SURFACE OR FINISH BACK TO ITS ORIGINAL CONDITION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 40. CONTRACTOR SHALL PROVIDE DUST PROTECTION AS REQUIRED TO CONTAIN DUST AND DEBRIS WITHIN CONSTRUCTION AREA, BROOM CLEAN ALL AREAS EACH DAY.
- 41. FOR ALL NEW NETWORK DATA DROPS, WIRE TO BE CONCEALED IN BACKBOX AND TERMINATE ONTO COVERPLATE WITH PUNCHDOWN FOR A CLEAN INSTALLATION. ALL CONTROL STATION'S NETWORK CONNECTIONS TO HAVE WALL COVER PLATES AND DATA JACKS STANDARD.
- 42. THROUGHOUT THESE DOCUMENTS THE TERM "HEADEND EQUIPMENT" IS USED. THIS IS USED AS A GENERIC TERM AND IS NOT INTENDED TO IDENTIFY ANY SPECIFIC ELECTRONIC COMPONENT, BUT RATHER TO IDENTIFY NEW EQUIPMENT BEING PROVIDED AND INSTALLED UNDER THIS CONTRACT. THIS GENERIC REFERENCE CAN BE FOR ANYTHING FROM A TERMINAL STRIP TO A PLC TO AN ENCLOSURE TO A NETWORK SWITCH, ETC.. PLEASE REFER TO THE DESIGN DOCUMENTS IN THEIR ENTIRETY FOR THE SPECIFICS OF THE ACTUAL COMPONENTS AND WHERE THEY OCCUR.
- 43. RISER DIAGRAMS ARE DIAGRAMMATIC. REFER TO ALL DOCUMENTS IN THEIR ENTIRETY FOR COMPLETE QUANTITIES AND LOCATION OF ALL EQUIPMENT, DEVICES, COMPONENTS. ALL SECURITY DEVICES AND EQUIPMENT SHALL BE INSTALLED WITH CONSIDERATION TO BARRIER FREE ACCESSIBILITY. DIV 28 CONTRACTOR TO INVESTIGATE SITE TO VERIFY ALL EXISTING CONDITIONS.
- 44. IN THE EVENT OF A DISCREPANCY BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, WHICHEVER IS MORE STRINGENT OR CALLS FOR THE HIGHEST QUANTITY OR QUALITY OF MATERIALS HAS PRECEDENCE.
- 45. WHERE THE CONTRACTOR MUST CHANGE ANY DEVICE TYPE OR MOUNTING TO SUIT ACTUAL CONDITIONS, THIS SHALL BE DONE WITHOUT EXTRA COST TO THE OWNER. THIS INCLUDES ANY ADDITIONAL PART TO BE SUPPLIED BY THE CONTRACTOR TO ACCOMPLISH PROPER MOUNTING OF A DEVICE. HOWEVER, IT SHALL BE REQUESTED, SUBMITTED, AND APPROVED IN WRITING BEFORE COMMENCING THE WORK.
- 46. FACILITY TO REMAIN OPERATIONAL DURING INSTALLATION OF NEW SECURITY ELECTRONICS SYSTEM. FULLY COORDINATE SCHEDULE AND FACILITY NEEDS WITH OWNER PRIOR TO ANY DEMOLITION OR INSTALLATION.

SECURITY ELECTRONICS SYMBOL LEGEND

- ELECTRONICALLY CONTROLLED AND MONITORED OPENING BY THE ACCESS CONTROL SYSTEM.
- CARD READER, CONNECT BACK TO NEW RS2 HEADEND EQUIPMENT. ACCESS CONTROL SYSTEM TO BE CONNECTED TO COUNTY ENTERPRISE SYSTEM.
- EXISTING ACCESS CONTROLLED DOOR. FOR REFERENCE ONLY.
- EXISTING CARD READER. FOR REFERENCE ONLY.
- REX REQUEST-TO-EXIT (REX). TO BE AN INTEGRAL FEATURE OF THE DOOR HARDWARE WHERE POSSIBLE, UTILIZE THE REX FEATURE CONTACT OF THE DOOR HARDWARE AS A REX INPUT TO THE ACCESS CONTROL SYSTEM. WHERE AN INTEGRAL REX FEATURE IS NOT PROVIDED, SEC TO PROVIDE AN OVERHEAD MOTION REX DEVICE.
- DESK MOUNTED PUSH BUTTON FOR DOOR CONTROL. MOUNT PUSH BUTTON UNDER COUNTER, REFER TO DETAILS. COORDINATE INSTALL TO ARCHITECTURAL ADA GUIDELINES AND FINAL PLACEMENT WITH OWNER'S REPRESENTATIVE.
- DESK MOUNT DURESS PANIC BUTTON. MOUNT BUTTON UNDER COUNTER, REFER TO DETAILS. COORDINATE INSTALL TO ARCHITECTURAL ADA GUIDELINES AND FINAL PLACEMENT WITH OWNER'S REPRESENTATIVE. DURESS BUTTONS TO REPORT BACK TO ACCESS CONTROL SYSTEM.
- FIXED POSITION VIDEO IP COLOR CAMERA, REFER TO CAMERA SCHEDULE. DENOTES NEW CAMERA LOCATION. ROUTE CONDUIT AND WIRE TO NEAREST EQUIPMENT ROOM.
- FIXED POSITION 360 DEGREE VIDEO IP COLOR CAMERA, REFER TO CAMERA SCHEDULE. DENOTES NEW CAMERA LOCATION. ROUTE CONDUIT AND WIRE TO NEAREST EQUIPMENT ROOM.
- VIKING AUTO-DIALER DEVICE. COORIDNATE WITH OWNER FOR SETUP AND CALL LOCATIONS.
 - PEDESTAL, REFER TO ARCHITECTURAL

SECURITY ELECTRONICS NAMING CONVENTION

CONTROLLED & MONITORED OPENING SYMBOLS:

CAMERA SYMBOLS:

CXXX

"C" DESIGNATION FOR AVIGILON CAMERAS"V" DESIGNATION FOR VERKADA CAMERASUNIQUE CAMERA IDENTIFIER NUMBER

DURESS BUTTON SYMBOLS:

DEVICE NUMBER TO MATCH ROOM NUMBER

> XXXXX.1

WHERE MULTIPLE DURESS DEVICES OCCUR IN A ROOM, A UNIQUE NUMBER WILL BE ADDED AFTER THE ROOM NUMBER

CARD READER SYMBOLS:

■ XXXX

— DEVICE NUMBER TO MATCH OPENING NUMBER

CAMERA SCHEDULE

	<u> </u>				
CAMERA		CAMERA			
NAME	CAMERA TYPE	SYSTEM	ROOM#	ROOM NAME	MOUNTING TYPE
C201	8.0C-H5A-FE-DC1	AVIGILON	2001	CORRIDOR	360 CEILING MOUNT CAMERA
C202	2.0C-H6SL-D1	AVIGILON	2006	PUBLIC CORRIDOR	CEILING MOUNT CAMERA
C203	2.0C-H6SL-D1	AVIGILON	2006	PUBLIC CORRIDOR	CEILING MOUNT CAMERA
C204	8.0C-H5A-FE-DC1	AVIGILON	2007	WAITING	360 CEILING MOUNT CAMERA
C205	2.0C-H6SL-D1	AVIGILON	2034	COURTROOM	CEILING MOUNT CAMERA
C206	8.0C-H5A-FE-DC1	AVIGILON	2035	CORRIDOR	360 CEILING MOUNT CAMERA
V201	CM22-256-HW	VERKADA	2002	CORR.	CEILING MOUNT CAMERA
V202	CM22-256-HW	VERKADA	2006	PUBLIC CORRIDOR	CEILING MOUNT CAMERA

Grand total: 8

NOTE: AVIGILON CAMERAS TO BE TIED INTO THE COURT SECURITY VIDEO SYSTEM. VERKADA CAMERAS TO BE TIED INTO THE COUNTY ENTERPRISE NETWORK. COORDINATE WITH COUNTY IT AND OWNER.

36+00.

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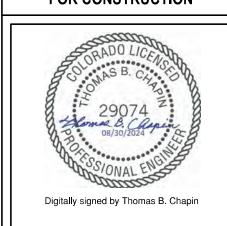
MESA COUNTY JUSTICE CENTER SECOND FLOOR

RENOVATION

125 N SPRUCE ST GRAND JUNCTION, CO 81501

SECURITY ELECTRONICS GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS LEGEND

FOR CONSTRUCTION



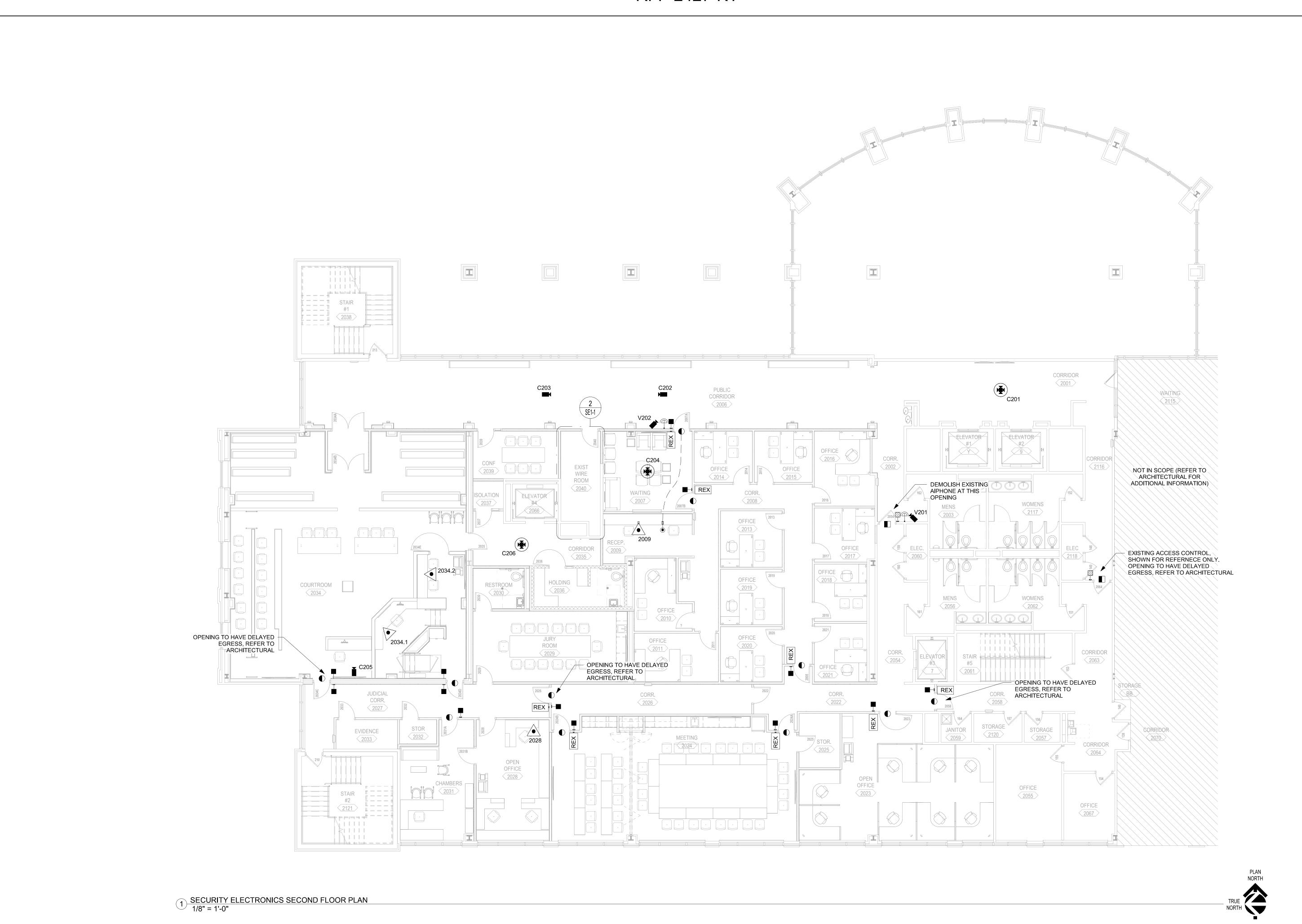
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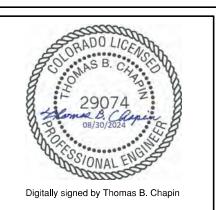
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MESA COUNTY JUSTICE CENTER SECOND FLOOR RENOVATION

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> SECURITY ELECTRONICS FLOOR PLAN

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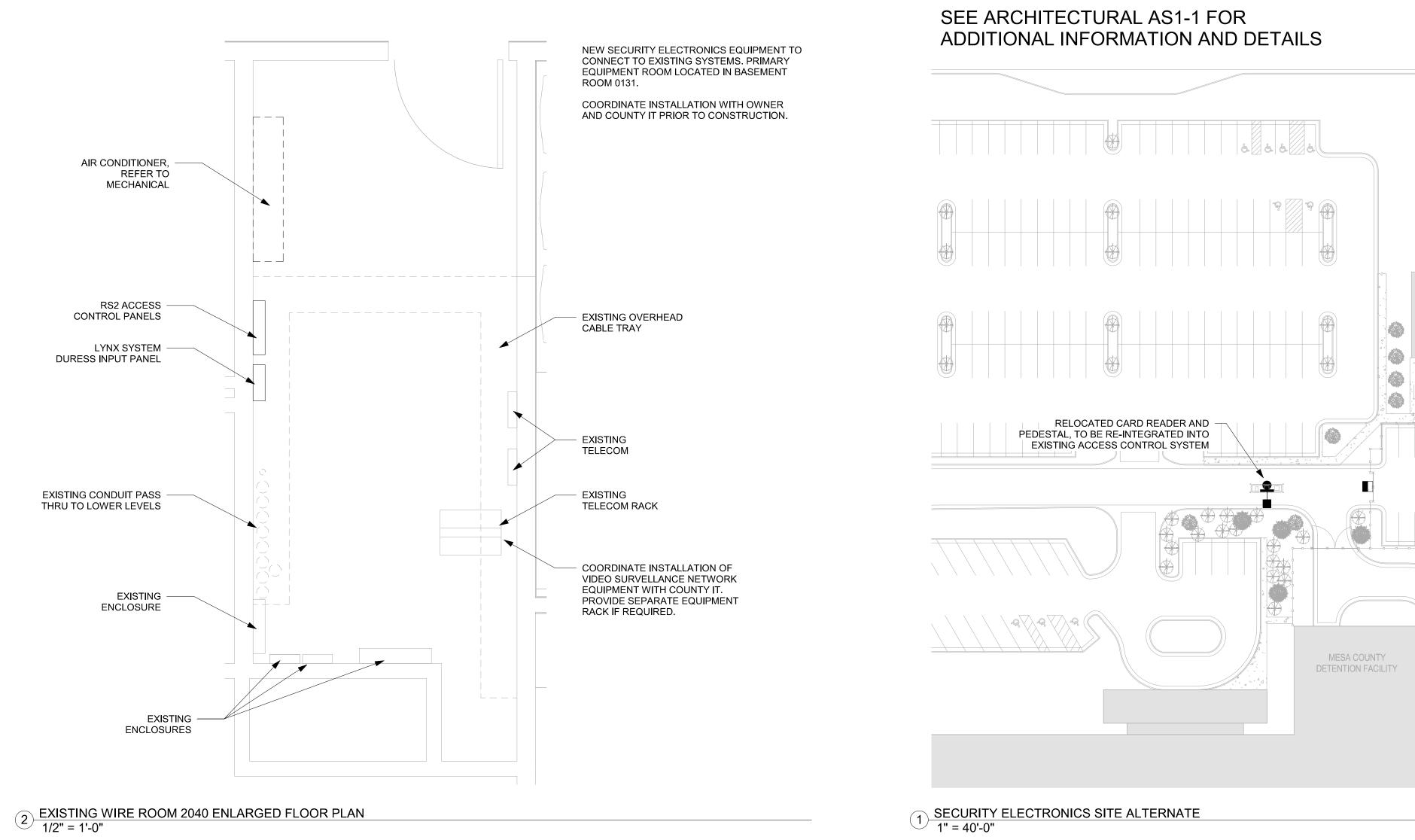
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SEE ARCHITECTURAL AS1-1 FOR ADDITIONAL INFORMATION AND DETAILS

SHOULD SHEET

ASSOCIATION AND DETAILS SAMEN

PROPERTY ASSESSMENT ASS

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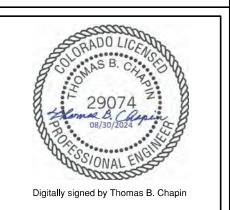
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SECURITY ELECTRONICS
SITE AND ENLARGED
PLANS

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PLAN NORTH

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RENOVATION

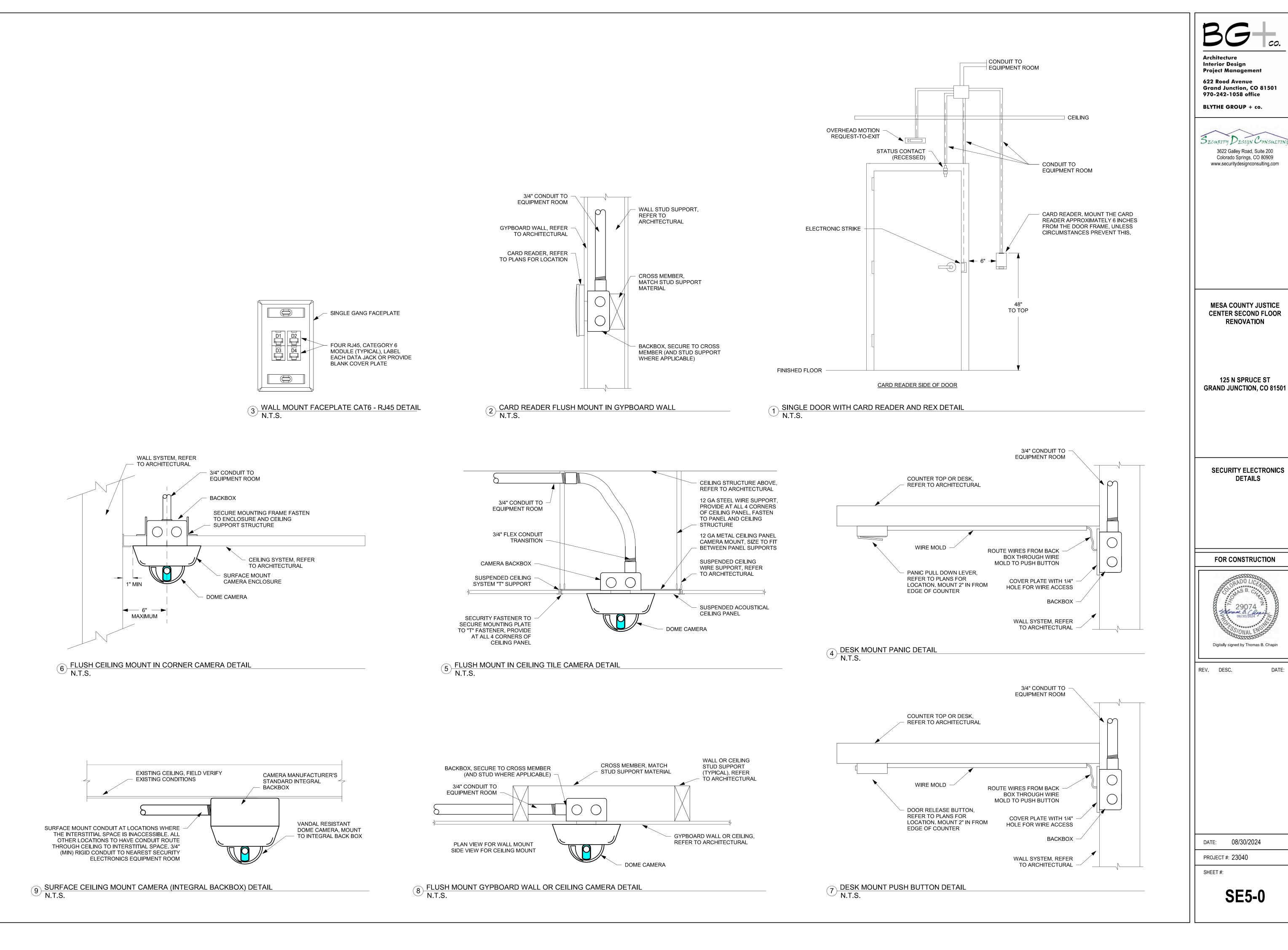
125 N SPRUCE ST

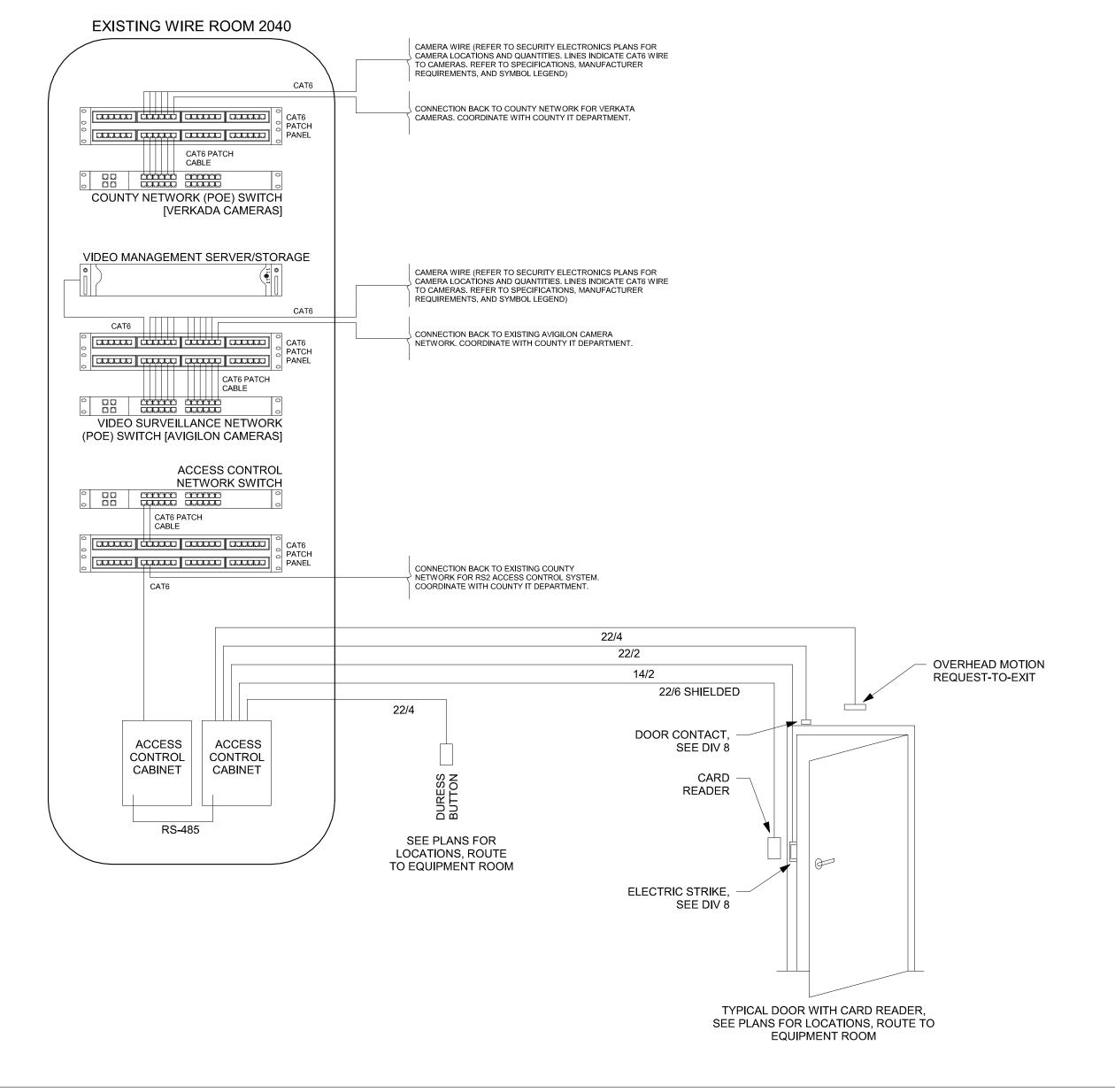
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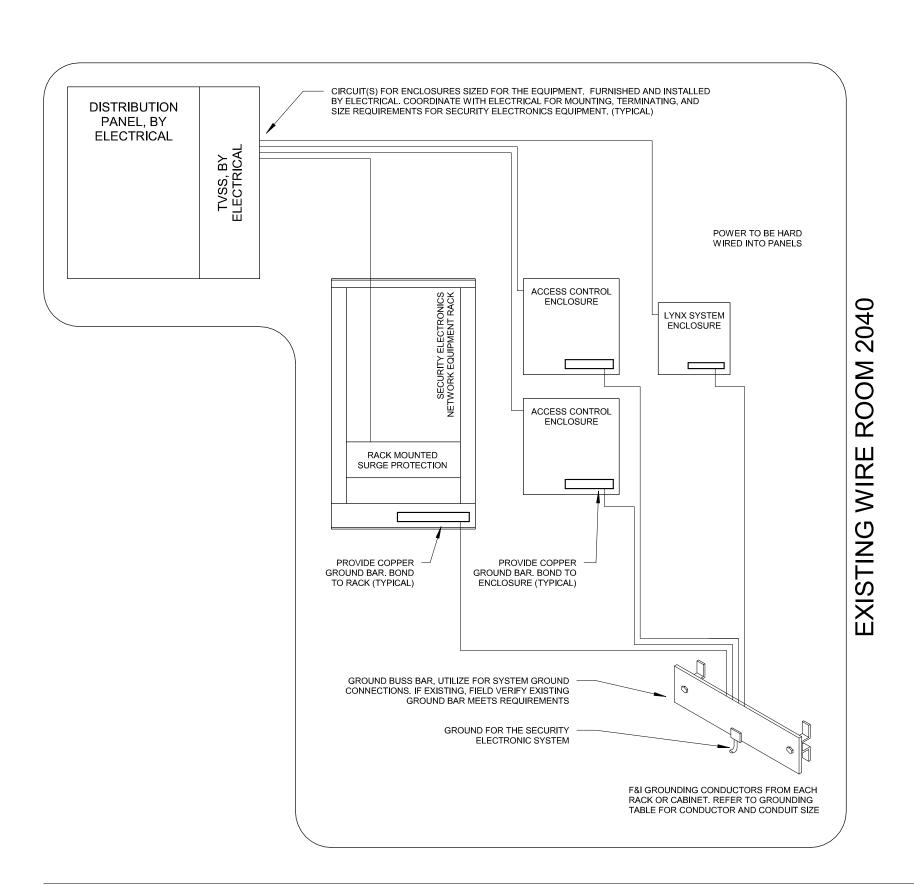
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Digitally signed by Thomas B. Chapin

SE5-0







GROUNDING TABLE									
TBB/GE/BCT LENGTH (FEET)	MINIMUM CONDUIT SIZE (INCHES)	CONDUCTOR SIZE (AWG)							
LESS THAN 13	3/4	6							
13 THRU 19	3/4	4							
20 THRU 25	1	3							
26 THRU 32	1	2							
33 THRU 40	1 1/4	1							
41 THRU 51	1 1/4	1/0							
52 THRU 66	1 1/2	2/0							
GREATER THAN 66	1 1/2	3/0							

OVERALL FUNCTIONAL DIAGRAM AND NETWORK DIAGRAM

POWER AND GROUNDING FUNCTIONAL DIAGRAM

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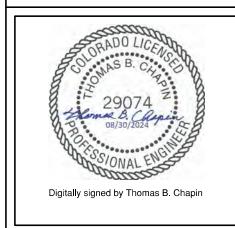
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SECURITY ELECTRONICS RISER DIAGRAMS

FOR CONSTRUCTION



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